DOCUMENT RESUME

ED 414 454 CE 075 373

TITLE	Computerized Business Technologies.
INSTITUTION	Columbus State Community Coll., OH.
PUB DATE	1996-00-00
NOTE	210p.; Product of the Heart of Ohio Tech Prep Consortium. For related documents, see CE 074 822 and CE 075 374-377.
PUB TYPE	Guides - Classroom - Teacher (052)
EDRS PRICE	MF01/PC09 Plus Postage.
DESCRIPTORS	Academic Education; Advisory Committees; *Articulation (Education); *Business Education; Competence; *Competency Based Education; *Computer Oriented Programs; Consortia; Curriculum Guides; Employment Opportunities; Employment Projections; Equipment Utilization; Grade 11; Grade 12; High Schools; Labor Market; Models; *Office Automation; Office Machines; Office Management; Teaching Guides; *Tech Prep; Technical Institutes; Technical Occupations; Two Year Colleges
IDENTIFIERS	Curriculum Mapping; South Western City Schools OH

ABSTRACT

This document contains materials developed for and about the computerized business technologies tech prep program of the South-Western City Schools in Ohio. Part 1 begins with a map of the program, which begins with a computerized business technologies program in grades 11 and 12 that leads to entry-level employment or one of two 2-year programs (microcomputing technology and office administration technology) at a community college that in turn lead to a technical career or transfer to a four-year college or university. Also included in part 1 are the high school curriculum pathways and pathway narratives for three vocational schools and one high school. Part 2, which constitutes approximately 40% of the document, lists the program's (unleveled) secondary technical and academic competencies. Presented in part 3 are secondary competencies leveled for a career center and high school. Postsecondary competencies are contained in part 4. Concluding the document are the following: labor market data; list of advisory/review committee members; and program application (information on employment opportunities in the area, potential exit occupations for the program, and plans for the program's delivery). Among the categories of competencies included are the following: business communication; data entry; accounting; business law; and personal finance. (MN)

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ED 414 454

HEART of OHIO TECH PREP CONSORTIUM

Computerized Business Technologies

Approved & Revised, Consortium Board of Directors, 1996

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

- Secondary & Postsecondary Curriculum Pathways & Narratives
- Secondary Academic Competencies - Unleveled
- Secondary Competencies - Leveled per School
- Postsecondary Competencies
- Labor Market Data
- Advisory/Review Committee Members
- Program Application

Heart of Ohio Tech Prep Consortium

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COMPUTERIZED BUSINESS TECHNOLOGIES

Heart of Ohio Tech Prep Consortium

Approved & Revised, Consortium Board of Directors, 1996

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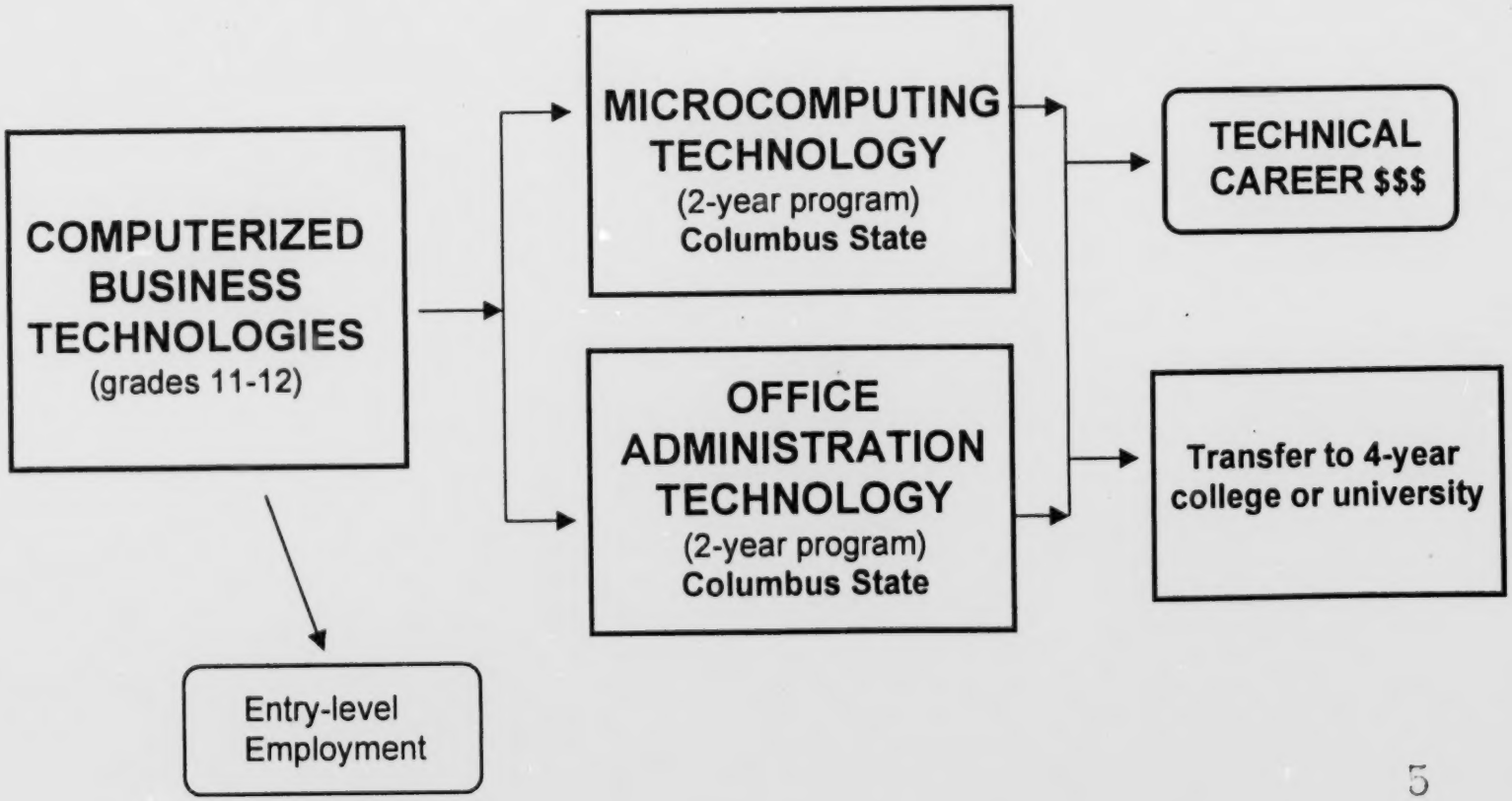
Heart of Ohio Tech Prep Consortium

MAP of COMPUTERIZED BUSINESS TECHNOLOGIES Tech Prep Program (12/97)



HEART of OHIO TECH PREP CONSORTIUM

Revised, 1996

Computerized Business Technologies Model

PART I.A:
Secondary Curriculum Pathways and Narratives

A. Eastland VEPD
B. Reynoldsburg High School
C. Whitehall-Yearling High School
D. Franklin Heights High School

Eastlan.. VEPD

Central Ohio Tech Prep Consortium

September 1995-a

9th Grade	Min	10th Grade	Min	11th Grade	Min	12th Grade	Min
				Tech Comm 11	40	American Govt/	40
				Tech Prep Accounting I	40	20th Century Am. Hum.	
				World Humanities/	40	Tech Prep II Comm.	40
				Global Economics		Tech Prep Accounting II	40
				Tech Algebra II	40	Tech Prep CBT Lab	
				Tech Prep CBT Lab		includes 1 credit of	150
				includes 1 credit of	150	Tech Prep Math II (Boolean Algebra & Statistics) * competency dev. options	
				computer science			

PREREQUISITES FOR GRADE 11 OF TECH PREP:
Demonstrate potential for college preparatory course work as measured by a standardized achievement test and by being enrolled in a college preparatory curriculum with no academic deficiencies for grades 9 and 10, Algebra I, Word Processing, and General Business.

PREREQUISITES FOR COLLEGE PORTION OF TECH PREP:
Enrollment in 11th and 12th grade Tech Prep academic and technical course work or college preparatory course work. Articulation or proficiency testing will determine where students place into the program.

SUGGESTED ELECTIVES:
Foreign Language (Grades 9 & 10)
Tech Prep Physics (Grade 12)

EXPLANATION OF TECH PREP BLOCKS:
11th Grade: Tech Prep computer science and occupational competencies taught in 150 minute lab.
12th Grade: Tech Prep Math II (Boolean Algebra & Statistics) and occupational competencies taught in 150 minute lab.
***12th Grade:** Occupational competencies developed through participation in school-based learning; worksite-based internships, mentorships; and/or enrollment in post-secondary options.

HIGH SCHOOL EXIT OCCUPATIONS:
Computer Operator, Department Secretary (entry-level), Customer Service Representative, Collection Representative, New Accounts Representative, Research Clerk, Remittance Processor.

COLLEGE EXIT OCCUPATIONS:
Business Applications Programmer, Computer User Liaison, Trainer for Micro-Computer Systems Applications Software, Consultant or Salesperson for Micro-Computer Systems Hardware and Software, Staff Assistant, Supervisor, Management Analyst, Account Representative, and Program Coordinator.

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Central Ohio Tech Prep Consortium
Curriculum Pathway Narrative

Eastland Career Center
September 1995

Directions: Please complete this document to accompany the curriculum pathways.

In the space below, describe system change at the secondary level and what new options are now available for Tech Prep high school students (occupational, employability, and academic).

Systemic changes are reflected in the computerized business technology (CBT) program schedule where students have the option of attending the career center for a full day or attending their home school for the academic portion of the program and spending a half day at the career center for the occupational portion of the program.

CBT provides college-bound students with expertise in business-oriented computer applications, develops critical thinking skills, and encourages teamwork. Students have a project-based curriculum using a variety of computer software packages to assist them in solving business programs. The computer is a tool in the CBT program, a means to an end, not the primary focus of the program.

Flexible block scheduling allows the computerized business technology instructor and the academic teaching team to provide students computer-applicable information on accounting, business administration, finance, marketing, data base, presentation graphics, spreadsheets, communications, and advanced math. At times three instructors will be available to work with the same group of students to provide a "hands-on" applied approach toward academics. Academic classes have been scheduled to allow classes to meet from one to two periods per day based on the activity planned. Staff will have common planning periods that will allow applied interdisciplinary units to be developed. Business partnership arrangements will allow students to have actual workplace experience as a group and on an individual basis beginning in the 11th grade year.

The occupational competencies will be delivered in the 150-minute CBT lab. During the 11th grade block, the vocational instructor and a computer science instructor will team teach the occupational competencies and tech prep computer science. During the 12th grade 150-minute block, Boolean Algebra and Statistics (tech prep math 11) and occupational competencies will be taught.

The academic course work is designed to prepare students to go on to the post-secondary level and is taught in an applied fashion and correlated to the business field.

During the senior year of the program, occupational competencies are developed through participation in school-based learning; worksite-based internships, mentorships; and/or enrollment in post-secondary options.

The computerized business technology program will emphasize authentic assessment utilizing portfolio, project based, and hands-on evaluations. Students will have to demonstrate and describe problem solving approaches in order to meet the minimum standards for a certificate.

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Reynolds urg High School &
Eastland √EPD

Computerized Business Tec ology

Central Ohio Tech Prep Consortium

September 1995-a

9th Grade	Min	10th Grade	Min	11th Grade	Min	12th Grade	Min
Tech or Business Algebra I	200	Tech or Business Geometry	150	Tech Comm 11	40	American Govt/	40
Applied Communications		Applied Comm. I		Tech Prep Accounting I	40	20th Century Am. Hum.	
American History		Resource Management		World Humanities/	40	Tech Prep II Comm.	40
Applied Biology		Mechanical Science/		Global Economics		Tech Prep Accounting II	40
Personal Development	50	Tech Biology		Tech Algebra II	40	Tech Prep CBT Lab	150
Word Processing	50	Adv Word Process/Computers	50	Tech Prep CBT Lab	150	includes 1 credit of	
Physical Education (1 sem)	50	Heath (1 sem)	50	includes 1 credit of		Tech Prep Math II (Boolean Algebra & Statistics)	
		Physical Education (1 sem)	50	computer science		* competency dev. options	

PREREQUISITES FOR GRADE 11 OF TECH PREP:
Demonstrate potential for college preparatory course work as measured by a standardized achievement test and by being enrolled in a college preparatory curriculum with no academic deficiencies for grades 9 and 10, Algebra I, Word Processing, and General Business.

PREREQUISITES FOR COLLEGE PORTION OF TECH PREP:
Enrollment in 11th and 12th grade Tech Prep academic and technical course work or college preparatory course work. Articulation or proficiency testing will determine where students place into the program.

SUGGESTED ELECTIVES:
Foreign Language (Grades 9 & 10)
Global Studies (Grade 10)
Life Planning (Grade 10)
Tech Prep Physics (Grade 12)

EXPLANATION OF TECH PREP BLOCKS:
9th Grade: Students are in a 200-minute block of core curriculum.
10th Grade: Students are in a 150-minute block of core curriculum.
11th Grade: Tech Prep computer science and occupational competencies taught in 150 minute lab.
12th Grade: Tech Prep Math II (Boolean Algebra & Statistics) and occupational competencies taught in 150 minute lab.
***12th Grade:** Occupational competencies developed through participation in school-based learning; worksite-based internships, mentorships; and/or enrollment in post-secondary options.

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HIGH SC OL EXIT OCCUPATIONS:
Computer Operator, Department Secretary (entry-level), Customer Service Representative, Collection Representative, New Accounts Representative, Research Clerk, Remittance Processor.

COLLEGE EXIT OCCUPATIONS:
Business Applications Programmer, Computer User Liaison, Trainer for Micro-Computer Systems Applications Software, Consultant or Salesperson for Micro-Computer Systems Hardware and Software, Staff Assistant, Supervisor, Management Analyst, Account Representative, and Program Coordinator.

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Central Ohio Tech Prep Consortium
Curriculum Pathway Narrative

Reynoldsburg High School
September 1995

Directions: Please complete this document to accompany the curriculum pathways

In the space below, briefly describe the systemic change at the secondary level and what new options are now available for Tech Prep high school students (occupational, employability, and academic).

Systematic change at Reynoldsburg High School is reflected in the integration of personal development and resource management classes, mentorship, and core curriculum classes in a team setting. Change is also reflected in the eleventh and twelfth grade plan in which students will have the option of attending the high school Tech Prep program of their choice for one-half or full-day, attending the career center for the occupational portion of the program.

In the ninth grade, the Reynoldsburg High School Tech Prep plan combines six subjects (math, science, American history, communications, word processing, applications, and personal development) taught by a team of six teachers. The four core subjects will be delivered in a 200-minute block in the morning. Word Processing Applications and Personal Development, which are normally semester classes, will be offered in the afternoon following lunch on an alternating-day basis determined by which group the student is in – purple or gold. For example, period six purple would go to Word Processing Applications on Monday while period six gold would go to Personal Development. On Tuesday, the groups would switch classes, etc. All students receive 5 1/4 credits that include one math, one communications, one science, one American history, one-half word processing elective, and 3/4 personal development elective. Through the Personal Development class, students will have the opportunity to do job shadowing. The students also have two periods for electives or other freshman required courses in the afternoon. Projects will be introduced approximately once a month and will be "led" by one of the six team subjects. Each project will integrate from two to all six classes. One hundred eight ninth-grade students have selected the Tech Prep plan.

In the tenth-grade year, students have an opportunity to continue their Tech Prep studies in a 150-minute morning block of classes taught by a team of teachers. These classes include communications for one credit, math for one credit, computer applications for one-half credit, and resource management for 3/4 credit and are job focused. Again, computer applications and resource management meet on an alternating day basis. In the resource management class, students will study the process of finding a job, go through mock interviews, and will study how to budget their resources to enhance their personal life. Following lunch, students have the opportunity to take up to four electives or other sophomore required classes. Thematic projects will be introduced once every nine weeks.

The Reynoldsburg Tech Prep plan also incorporates the Inclusion program. Each team is provided with a resource teacher that modifies curriculum for any LD/DH students on the team. This teacher is also available in the classroom for any other students who have questions, thereby allowing more students to understand material presented, since there are two teachers available to help students rather than one.

At the junior and senior level, students will select a high school Tech Prep program to study based upon their career interests. Career clusters and applied academics are currently being developed in Business Technologies. We believe our program provides a seamless curriculum in which students can graduate prepared to enter a two-year, technical, or four-year post-secondary program.

Whitel ·Yearling High School &
Eastland VEPD

Computerized Business Te ıology

Central Ohio Tech Prep Consortium

September 1995-a

9th Grade	Min	10th Grade	Min	11th Grade	Min	12th Grade	Min
Tech Prep Algebra I (Algebra I A) Science/Biology Comm, Business Technology/Drafting	214	Tech Prep Geometry (Algebra I B) Science/Physical Science Communications Computer Applications	170	Tech Comm 11	40	American Govt/ 20th Century Am. Hum.	40
				Tech Prep Accounting I	40		
				World Humanities/ Global Economics	40	Tech Prep II Comm.	40
						Tech Prep Accounting II	40
				Tech Algebra II	40	Tech Prep CBT Lab includes 1 credit of Tech Prep Math II (Boolean Algebra & Statistics) * competency dev. options	150
Elective	50	Social Studies	50	Tech Prep CBT Lab includes 1 credit of computer science	150		
Elective	50	Elective	50				
Elective	50						

PREREQUISITES FOR GRADE 11 OF TECH PREP:
Demonstrate potential for college preparatory course work as measured by a standardized achievement test and by being enrolled in a college preparatory curriculum with no academic deficiencies for grades 9 and 10, Algebra I, Word Processing, and General Business.

PREREQUISITES FOR COLLEGE PORTION OF TECH PREP:
Enrollment in 11th and 12th grade Tech Prep academic and technical course work or college preparatory course work. Articulation or proficiency testing will determine where students place into the program.

SUGGESTED ELECTIVES:
Foreign Language (Grades 9 & 10)
Tech Prep Physics (Grade 12)

EXPLANATION OF TECH PREP BLOCKS:
11th Grade: Tech Prep computer science and occupational competencies taught in 150 minute lab.
12th Grade: Tech Prep Math II (Boolean Algebra & Statistics) and occupational competencies taught in 150 minute lab.
***12th Grade:** Occupational competencies developed through participation in school-based learning; worksite-based internships, mentorships; and/or enrollment in post-secondary options.

HIGH SCHOOL EXIT OCCUPATIONS:
Computer Operator, Department Secretary (entry-level), Customer Service Representative, Collection Representative, New Accounts Representative, Research Clerk, Remittance Processor.

COLLEGE EXIT OCCUPATIONS:
Business Applications Programmer, Computer User Liaison, Trainer for Micro-Computer Systems Applications Software, Consultant or Salesperson for Micro-Computer Systems Hardware and Software, Staff Assistant, Supervisor, Management Analyst, Account Representative, and Program Coordinator.

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Central Ohio Tech Prep Consortium
Curriculum Pathway Narrative
Whitehall-Yearling High School
September 1995

Directions: Please complete this document to accompany the curriculum pathways.

In the space below, briefly describe the systemic change at the secondary level and what new options are now available for Tech Prep high school students (occupational, employability, and academic).

Whitehall-Yearling High School has chosen to create its own model of excellence using The Effective Schools Model as a springboard. A vast majority of our students graduate from the "general track" with no specific employability skills. Therefore, we are initiating Tech Prep, an interdisciplinary, project-oriented approach to learning, which will more effectively prepare graduates to enter the work force, college, or other post-secondary educational opportunities.

The Whitehall-Yearling Plan, during the ninth-grade block, will combine five subjects (communications, math, science, business, and technology) in a four-period time block. The block will be 214 minutes long and will be delivered in the first four periods of the day. Students will travel from the different rooms based on time schedules to be determined by the team of teachers. All students will receive four credits that include: 1 math, 1 communication, 1 science, 1/2 business, 1/2 technology. These students will then have a lunch period, followed by three additional periods for electives or other required courses. During the Tech Prep program each project will focus on a different academic area. One hundred ninth-grade students have been selected for the Tech Prep team.

The tenth grade block consisting of communications, science, math, and computer applications will enable students to continue their Tech Prep studies. That team of teachers will be selected before school is adjourned in June 1994. The tenth grade Tech Prep program will be based on four thematic units. At the junior and senior levels, students will be instructed by vocational instructors at the home school, at the career centers, or on the job. Career clusters and applied academics are currently being developed in engineering and technology. This constitutes our view of a seamless curriculum whereby students will graduate prepared to enter two-year, technical, or four-year post-secondary programs, or the world of work. We feel the Whitehall-Yearling Plan addresses the precepts of the common belief system as follows:

ALL STUDENTS CAN LEARN: The Whitehall-Yearling Plan addresses the needs of all students, especially those who learn best in a nontraditional environment. The removal of barriers posed by the traditional, 50 minute academic block will allow students to become more participatory in their learning. Students will see connections between academics and the world of work. Project-based learning will ensure applied academics and hands-on experiences. This plan will also more effectively allow for mainstreaming and inclusion of special needs students. Teachers will be seen and heard making decisions and discussing various strategies to enhance student success.

LEARNERS POSSESS MULTIPLE INTELLIGENCES: The Whitehall-Yearling Plan will be built upon the students' individual talents and strengths such as music, photography, speech, etc., to complete unit projects. In addition, a learning styles assessment known as CAPSOL will be administered during the summer 1994, after which teachers can more effectively create classrooms and activities which take into account various learning styles. At the junior/senior levels, students will be able to

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participate in career clusters which most appropriately match their individual aptitudes and interests. Teachers will be observed using five to seven instructional strategies during a unit of study.

PARTICIPATION IN A LEARNING COMMUNITY FOSTERS SOCIAL, CIVIC, EMOTIONAL, AND INTELLECTUAL GROWTH: Teachers working in interdisciplinary teams will help students see the connections between academic disciplines. The use of more hands-on projects, especially the culminating activities, will encourage students to learn to work and problem-solve in teams. Weekly Tech Prep assemblies of students and teachers will be held to increase communication. The Tech Prep team has already begun referring to the success of "our" kids for the next year. Community members, parents, and business partners will be involved in the assessment of those projects. As the students move into the tenth grade Tech Prep program, shadowing experiences, interest inventories, interning, use of the OCIS, review of the ICP, and exploration of the career clusters will be encouraged. Juniors and seniors will be involved in technical career clusters at off-site locations such as Mt. Carmel East Hospital, Columbus State Community College, AT & T, Limited Credit Services, EBCO, and the C. Ray Williams Early Child Development Center.

DIVERSE INSTRUCTIONAL STRATEGIES AND ENVIRONMENTS: The school day will certainly be different for the Tech Prep student. Class time will be based on learning needs rather than on the clock. Tech Prep teachers have already been given common planning time as well as an individual planning period. Alternative assessments such as portfolios, learning logs, and audio-visual projects will be used in conjunction with community assessors and displayed throughout the school. The SCANS report has been utilized to determine competencies needed in modern occupations and will be studies by students in applied classes.

SUPPORT SYSTEMS: Whitehall is fortunate to have acquired five computer labs for student use which will be an integral part of The Whitehall-Yearling Plan as the students learn keyboarding, editing, and desktop publishing skills. The Board of Education has allowed the high school to eliminate the general track and has encouraged our pursuit of the Tech Prep initiative. The BRIDGES grant acquired in 1990 has since been incorporated into the district budget, providing peer assisted learning tutors. Whitehall is also fortunate to have a broad base of support from local corporations and small businesses, led by its education partner, Limited Credit Services. Within a five-mile radius, lie Mt. Carmel East Hospital, AT & T, EBCO, DCSC, DFAS, and Port Columbus.

FRANKLIN HEIGHTS HIGH SCHOOL
COMPUTER BUSINESS TECHNOLOGY

Period	9th Grade	Min	10th Grade	Min
1	ILTP Algebra ILTP English ILTP Science ILTP Social Studies (Global Studies) ILTP Spanish I Keyboarding	248	Elective	50
2			Health/P.E. (Wellness)	50
3			Elective	50
4			Lunch	30
5			ILTP Algebra/Geometry ILTP Bio-Chemistry ILTP English ILTP Principles of Technology ILTP Social Studies (U.S. History) Computer Applications	248
6				
7	Lunch	30		
8	Elective	50		
9	Physical Education	50		
10	Elective	50		

Period	11th Grade	Min	12th Grade	Min
1	College Tech English Computer Business Technology	156	Transition to College Math	50
2			Spanish or Elective	50
3			Computer Science	50
4	Lunch	30	Lunch	30
5	Study Hall	30	Study Hall	30
6	Geometry or Algebra II	50	Psychology/Economics	50
7				
8	CP Government	50	College Tech English Computer Business Technology	156
9	Spanish or Elective	50		
10	Biology or Chemistry	50		

FRANKLIN HEIGHTS HIGH SCHOOL

TECH PREP

BASIC STRUCTURAL COMPONENTS

Ninth/Tenth Grade

Integrated Approach

- project-based learning
- group work skills
- presentation skills
- research skills
- career awareness and exploration
- power computer usage
- written, oral and electronic communications skills
- applied academics
- interdisciplinary instruction
- collaborative planning
- redesigned student work
- alternative assessment
- multiple intelligences

Eleventh/Twelfth Grade

Career Clusters

- higher levels of math and science
- continued emphasis on communication skills
- advanced uses of technology
- workplace and job-site learning
- mentorships
- internships
- core technical courses in chosen career cluster
- applied academics
- post-secondary enrollment options

CURRICULUM PATHWAY NARRATIVE

Franklin Heights High School
October 1995

The Tech Prep program at Franklin Heights High School is designed to meet the needs of students who have traditionally participated in a segmented and often unfocused course of study (general education). With the Tech Prep emphasis on the integration of academics with workplace applications, this group of students will now be prepared to pursue a focused post-secondary course and will have practical skills that will enable them to be valued and successful employees.

Tech Prep is a major component in the total restructuring effort at Franklin Heights. The goal is to have at least 75 percent of all students complete college prep or tech prep curriculums and enter and complete post-secondary education. All other students will enter the work place appropriately prepared.

Tech Prep provides a blending of academic, technical and vocational competencies designed to raise expectations of students and to meet the needs of a technological workplace. Beginning with grade nine, students participate in applied academic courses which emphasize learning and practice in real-life settings. Through exposure to simulated problems which reflect actual events in the working world, students can apply their learning immediately and relate that learning to future work situations. This group of students has access to keyboarding training and the use of technology in practical application settings. With an emphasis on the global economy, students are better prepared to deal with an array of situations which are now a reality in our information age. These experiences make their skills much more marketable than those gained in a lecture format or a traditional educational setting.

Time periods are no longer static, but frequently change based on the needs of the students and the project or topic of study. Artificial time periods are not longer a barrier to innovation. At the ninth and tenth grade levels, the six teachers decide how the more than four hours of instructional time will be spent. A flexible schedule allows a range of opportunities, from a traditional four or five separate periods to an entire morning spent on a project which incorporates one or more academic area in an application and/or problem-solving situation. Teachers are provided with collaborative planning time which results in increased continuity among subject areas and allows teachers to team with combined groups of students to meet project goals.

At the end of grade ten, Tech Prep students may choose to continue their technical education in the Computerized Business Technology program at Franklin Heights or in the Information Engineering Technology program at Hayes Tech High School. Those students who expect to enter the labor market immediately after high school may enter one of a variety of vocational programs.

Computerized Business Technology's occupational competencies are delivered in a 156-minute block in a computer lab. College Tech English is integrated with the business and technical competencies. The business and English teachers were provided with collaborative planning time during the summer in order to implement the course of study. The district is in the process of hiring an individual to coordinate field experiences for the students during the junior and senior years. These experiences will include, but not be limited to, post-secondary enrollment options with Columbus State Community College as well as shadowing, mentoring, internships, and paid employment in the business community.

As the Tech Prep program expands, the relationships and partnerships with area business and industry will continue to evolve. The utilization of real life problems is made possible through sharing with businesses. Employees/employers in the area are becoming more and more involved in the teaching learning process as they engage in site visits and become "visiting teachers" within the Tech Prep classrooms. Students see more relevance to what they are doing and as a result, have improved attendance and decreased disciple problems. A variety of alternative assessments are being implemented in which student presentation of projects is a major component. Students will exit the program equipped to continue their studies at Columbus State Community College or to enter the workplace with the technical skills needed by employers.

HEART of OHIO TECH PREP CONSORTIUM

Revised, 1996

Computerized Business Technologies Model

PART I.B:
Postsecondary Curriculum
Pathways & Narratives

Columbus State Community College

Columbus State Community College **October 1995** **Microcomputing**
Technology
Secondary Path for Computerized Business Technology

Central Ohio Tech Prep Consortium

1st Quarter	Cr	2nd Quarter	Cr	3rd Quarter	Cr	4th Quarter	Cr	5th Quarter	Cr	6th Quarter	Cr
Computer Literacy I	3	Typing II	3	WordPerfect for Windows I	3	Information Presentation	3	Speech	3	Business Communications	3
Beginning Algebra I	4	Computer Literacy II	3	Introduction to Business	5	Technical Elective	3	Local Area Networks	3	Basic Education Elective	3
Typing I	3	PC Operating Systems	3	LOTUS 1-2-3	3	Humanities	5	Elementary Statistics	3	Social Science Requirement	5
Beginning Composition	3	Financial Accounting	4	Introduction to Database Systems	3	Introduction to RPG/400	3	Business Ethics	3	Final Project	5
Basic Education Elective	3	Microcomputer Fundamentals	3	Managerial Accounting	3	Management Information Principles	5	Introduction to Programming with Basic	3	Networking	5
Essay and Research	3	Office Automation	3	Desktop Publishing	3	Command Language/400	3	Technical Writing	3	Visual Basic	3
Intermediate Algebra	5	Legal Environment of Business	4	Introduction to AS/400	3						
WordPerfect for Windows II	3	Conference & Group Discussion	3	Introduction to Systems Analysis	3						
Management	5			Creative Writing	3						
				Computer Maintenance I	3						

Struckout courses = those that students may articulate or pass via proficiency testing
Shaded courses = advanced skills added to the curriculum

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POST

Columbus State Community College — **October 1995 Office Administration Technology**
Secondary Path for Computerized Business Technology — **Executive Office Administration Major**

Central Ohio Tech Prep Consortium

1st Quarter	Cr	2nd Quarter	Cr	3rd Quarter	Cr	4th Quarter	Cr	5th Quarter	Cr	6th Quarter	Cr
~~Business Grammar Usage~~	~~3~~	~~Beginning Composition~~	~~3~~	~~WordPerfect for Windows I~~	~~3~~	Humanities	5	~~Speech~~	~~3~~	~~Business Communications~~	~~3~~
~~Accounting Basics~~	~~4~~	~~Computer Literacy I~~	~~3~~	~~Business Mathematics~~	~~5~~	Executive Office Procedures I	7	Executive Office Procedures II	7	Executive Office Procedures III	7
~~Typing II~~	~~3~~	~~Editing Business Documents~~	~~3~~	Business Law III	3	Technical Writing	3	Executive Office Field Experience I	2	Executive Office Field Experience II	2
Typing III	3	Business Law II	3	Business Ethics	3	Personnel Interviewing	4	Conference & Group Discussion	3	Introduction to Literature	3
Records Management	3	Machine Transcription	4	Technical Elective	3			Business Elective	3	Special Topics	3
Business Law I	3	Business Elective	3	Office Management	4			Technical Elective	3		
WordPerfect for Windows II	3	Desktop Publishing	3	Natural Science	5						
Essay & Research	3	Technical Elective	3								

Struckout courses = those that students may articulate or pass via proficiency testing
Shaded courses = advanced skills added to the curriculum.

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High School Exit Occupations

Computer Operator
Department Secretary (entry-level)
Customer Service Representative
Collection Representative
New Accounts Representative
Research Clerk
Remittance Processor

College Exit Occupations:

Administrative Assistant
Office Manager
Assistant to Department Manager
Administrative Secretary
Executive Secretary
Executive Assistant
Customer Service Representative
Collection Representative
New Accounts Representative
Research Clerk
Remittance Processor
Human Resources Assistant

Prerequisites for College Portion of Tech Prep:

No specific prerequisites because articulation or proficiency testing will determine where students will enter into the program. However, in order to follow the sequence as closely as possible, students should be computer literate and proficient in typing and basic word processing.

Suggested Electives

Typing Improvement, Office Automation, Local Area Networks (LAN), Management, Human Resources Management, Human Resources Policy and Procedure Writing, Management Training for Supervisors, Organizational Behavior for Managers, and International Business.

Advanced Skills Portion of Tech Prep:

Shaded areas represent the advanced skills portion.

Explanation of Tech Prep Course Differences:

Struckout courses represent those that students may articulate or pass via proficiency testing. Shaded courses represent the advanced skills portion. The current technical program is represented by 103 credit hours. A student must articulate or proficiency 31 of the possible 33 hours represented by the struckout courses in order to complete the advanced skills portion of the program within the 103 credit hours.

Columbus State Community College **October 1995 Office Administration**
Technology
Secondary Path for Computerized Business Technology **Legal Office Administration Major**

Central Ohio Tech Prep Consortium

1st Quarter	Cr	2nd Quarter	Cr	3rd Quarter	Cr	4th Quarter	Cr	5th Quarter	Cr	6th Quarter	Cr
~~Business Grammar Usage~~	~~3~~	~~Beginning Composition~~	~~3~~	~~WordPerfect for Windows I~~	~~3~~	Humanities	5	~~Speech~~	~~3~~	~~Business Communications~~	~~3~~
~~Accounting Basics~~	4	~~Computer Literacy I~~	~~3~~	~~Business Mathematics~~	5	Legal Office Procedures I	7	Legal Office Procedures II	7	Legal Office Procedures III	7
~~Typing II~~	~~3~~	~~Editing Business Documents~~	~~3~~	Business Law III	3	Technical Writing	3	Legal Office Field Experience I	2	Legal Office Field Experience II	2
Typing III	3	Business Law II	3	Business Ethics	3	Personnel Interviewing	4	Conference & Group Discussion	3	Introduction to Literature	3
Records Management	3	Machine Transcription	4	Technical Elective	3			Business Elective	3	Special Topics	3
Business Law I	3	Business Elective	3	Office Management	4			Technical Elective	3		
WordPerfect for Windows II	3	Desktop Publishing	3	Natural Science	5						
Essay & Research	3	Technical Elective	3								

Struckout courses = those that students may articulate or pass via proficiency testing
Shaded courses = advanced skills added to the curriculum.

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High School Exit Occupations

Computer Operator
Department Secretary (entry-level)
Customer Service Representative
Collection Representative
New Accounts Representative
Research Clerk
Remittance Processor

College Exit Occupations:

Administrative Assistant
Legal Office Manager
Legal Secretary

Prerequisites for College Portion of Tech Prep:

No specific prerequisites because articulation or proficiency testing will determine where students will enter into the program. However, in order to follow the sequence as closely as possible, students should be computer literate and proficient in typing and basic word processing.

Suggested Electives

Typing Improvement, Office Automation, Local Area Networks (LAN), Legal Computing, Legal Research and Writing I, Business Law for Accountants, Family Law, Probate Law and Practice I, Administrative Law, Taxation, Insurance Law, Computer Assisted Legal Research, Introduction to Criminal Justice, Criminal Investigation I, Criminal Law, Criminal Evidence and Trial, Correctional Law, Ohio Criminal Code, Real Estate Law, Human Resources Management, Human Resources Policy and Procedure Writing, Staffing Under the Law, International Business, Construction Contract Documents, Legal Principles for E.M.T., Environmental Laws and Regulations, Law and Banking, Heating and Air Conditioning Mechanical Standards and Safety, and Hospitality Sanitation and Safety.

Advanced Skills Portion of Tech Prep:

Shaded areas represent the advanced skills portion.

Explanation of Tech Prep Course Differences:

Struckout courses represent those that students may articulate or pass via proficiency testing. Shaded courses represent the advanced skills portion. The current technical program is represented by 103 credit hours. A student must articulate or proficiency 31 of the possible 33 hours represented by the struckout courses in order to complete the advanced skills portion of the program within the 103 credit hours.

Columbus State Community College **October 1995** **Office Administration**

Technology

SST Secondary Path for Computerized Business Technology **Medical Office Administration**

Major

Central Ohio Tech Prep Consortium

1st Quarter	Cr	2nd Quarter	Cr	3rd Quarter	Cr	4th Quarter	Cr	5th Quarter	Cr	6th Quarter	Cr
~~Business Grammar Usage~~	3	~~Beginning Composition~~	3	~~WordPerfect for Windows I~~	3	SSCI Contemporary Issues	5	~~Speech~~	3	~~Business Communications~~	3
~~Accounting Basics~~	4	~~Computer Literacy I~~	3	~~Business Mathematics~~	5	Medical Office Procedures I	7	Medical Office Procedures II	7	Medical Office Procedures III	7
~~Typing II~~	3	~~Editing Business Documents~~	3	Humanities	5	Technical Writing	3	Medical Office Field Experience I	2	Medical Office Field Experience II	2
Typing III	3	Business Law II	3	Human Anatomy	5	Cardiopulmonary Resuscitation	1	Conference & Group Discussion	3	Introduction to Literature	3
Records Management	3	Introduction to Anatomy & Physiology	3	Technical Elective	3	Responding to Emergencies	2	Physician's Office Urinalysis	3	Special Topics	3
Business Law I	3	Business Elective	3	Office Management	4			Technical Elective	3	Business Ethics	3
WordPerfect for Windows II	3	Desktop Publishing	3								
Essay & Research	3	Technical Elective	3								

Struckout courses = those that students may articulate or pass via proficiency testing.
Shaded courses = advanced skills added to the curriculum.

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High School Exit Occupations
Computer Operator
Department Secretary (entry-level)
Customer Service Representative
Collection Representative
New Accounts Representative
Research Clerk
Remittance Processor

College Exit Occupations:
Administrative Assistant
Medical Office Manager
Assistant to Department Manager
Medical Secretary

Prerequisites for College Portion of Tech Prep:
No specific prerequisites because articulation or proficiency testing will determine where students will enter into the program. However, in order to follow the sequence as closely as possible, students should be computer literate and proficient in typing and basic word processing.

Suggested Electives
Typing Improvement, Office Automation, Local Area Networks (LAN), Management, Human Resources Management, Personnel Interviewing, Medical Terminology, Advanced Medical Terminology, Current Issues: HIV Infection, Instructor HIV/AIDS Course, Personal Health, Professionalism for Health Care Providers, Concepts of Pharmacology, Medicolegal Aspects of the Record, Analysis of the Health Record, Pharmacology for Health Information Management Technology, Inpatient Coding, Ambulatory Coding, Introduction to Health Statistics, Medical Reimbursement, Health Information Registries and Quality Assurance, and Human Resources Management,

Advanced Skills Portion of Tech Prep:
Shaded areas represent the advanced skills portion.

Explanation of Tech Prep Course Differences:
Struckout courses represent those that students may articulate or pass via proficiency testing. Shaded courses represent the advanced skills portion. The current technical program is represented by 105 credit hours. A student must articulate or proficiency 29 of the possible 33 hours represented by the struckout courses in order to complete the advanced skills portion of the program within the 105 credit hours.

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Curriculum Pathway Narrative

Columbus State Community College Office Administration Technologies
October 1995

In the space below, briefly describe the systemic change at the postsecondary level and what new options will be available for Tech-Prep college students (occupational, employability, and academic).

Systemic change that will occur in the Office Administration Technology Department at Columbus State as a result of the installation of Tech-Prep pathways in the Central Ohio Consortium include the following:

- Additional breadth and depth competencies will be possible at the post-secondary level as a result of students coming to Columbus State better prepared to do college level work. This will help ensure that business and industry's expectations for qualified Executive, Legal, and Medical Office Administration professionals are being met by freeing up time to cover additional competencies that are being requested by employers in the following areas:

  - Advanced Wordprocessing
  - Desktop Publishing
  - Writing
  - Business Management

  In the past these competencies were addressed through the student's selection of electives. With these competencies now being specifically addressed as a part of the curriculum, additional depth and breadth will be added to the curriculum through expanded options for technical and business electives in the following competency areas:

  - Specialized Areas of Business Law
  - Human Resources Management
  - International Business
  - Health Information Management

- Business and industry are seeking graduates that are broadly educated across disciplines as well as prepared specifically in technology specialties related to their primary field. The Central Ohio Consortium approach addresses these needs on a program-by-program articulation basis. This optimizes the ability of graduates to be immediately productive and job ready upon graduation from the Columbus State Community College associate degree program. Graduates from these advanced skills programs should enhance the employers' competitive ability in a period of rapid technological change.

  Articulation agreements between specific VEPD Tech-Prep programs and the Columbus State Community College Office Administration Department programs will be formalized on an individual VEPD basis, as the vocational articulation agreements are currently done. The Tech-Prep agreements will be in addition to, not in lieu of, existing vocational program agreements.

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- All Office Administration Technology programs are regularly validated through ongoing business and industry surveys. While the College is confident that all Office Administration programs currently meet business and industry needs, the faculty and administration of Columbus State acknowledge that some foundational competencies can be delivered within a collaboratively developed secondary curriculum. The development of this Tech-Prep curriculum provides students with a unique opportunity to augment a solid associate degree curriculum with valuable courses and educational experiences that are not currently included in the standard degree program. Students will benefit from the additional depth and breath offered by the advanced skills associate degree program as well as the elimination of the need for remediation upon entering Columbus State Community College.

HEART of OHIO TECH PREP CONSORTIUM

Revised, 1996

Computerized Business Technologies Model

PART II.A:
Secondary Technical
Competencies (Unleveled)

OADM 101

Business Grammar Usage Student Outcomes:

Upon completion of the course the student will be able to:

1. apply spelling a vocabulary rules to business sentences with a 70 percent accuracy rating.

2. identify and select use of parts of speech in business sentences with a 70% accuracy rating.

3. apply punctuation, capitalization, and number rules to business sentences with a 70% accuracy rating.

OADM 131

Typing I (Keyboarding) Student Outcomes:

Upon completion of the course the student will be able to:

1. demonstrate touch typing skills by identifying alphabetic keys on the keyboard and typing alphabetic keys with correct finger movements.

2. identify number keys on the keyboard and type number keys with correct finger movement.

3. identify number keys on the ten-key numeric keypad and type number keys on the keypad with correct finger movement.

4. identify special symbols on the keyboard and type special symbols on the keyboard with correct finger movement.

OADM 132

Typing II Student Outcomes:

Upon completion of the course the student will be able to:

1. type a letter in modern block style from rough draft copy; edit and change typed copy.

2. apply rules of tables and columns to statistical material.

3. count lines and spaces for correct table placement.

4. assemble data into correct table arrangements and key results; judge data presentation for correct alignment.

5. apply rules of office reports to documents demonstrating use of single and double spacing in paragraphing; change margins for left-bound reports.

6. type paragraphs for 3-minute timed writings with 3 errors or less.

OADM 161

DOS/Data Entry Student Outcomes:

Upon completion of the course the student will be able to:

1. name the following twenty-five DOS commands, and analyze and use them correctly as needed: FORMAT, RENAME, PROMPT, VER, TIME, DATE, CHKDSK, CLS, PRINT, COPY, DIR, UNDELETE, TYPE, ERASE/DEL, RMDIR, CHDIR, MKDIR, TREE, RESTORE, LABEL, VOL, BACKUP, DISKCOPY, HELP, DOSSHELL.

2. enter alphabetic and numeric data in the following activities at 8,000 or more keystrokes per hour with at least 99% accuracy: Marathon data; Merchandise inventory; Point of sale; Accounts receivable; Accounts Payable; Payroll records; Census survey; Auto insurance application; Drivers license application; Auto registration; Student class registration; Radio station survey; and Summary project.

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OADM 111

Accounting Basics Student Outcomes:

Upon completion of the course the student will be able to:

1. define and list examples of accounting assets, liabilities and owners equity accounts.

2. use the appropriate equation to analyze and record common business transactions.

3. post transactions from a general journal to the general ledger and prepare a trial balance.

4. prepare a net income statement, a statement of owners equity and a balance sheet.

5. journalize and post adjustments to supplies, prepaid insurance, accrued wages and depreciating asset account.

6. draft adjusting entries and financial statements on a worksheet; journalize and post adjusting entries from the worksheet; and prepare financial statements from the worksheet.

7. determine what accounts are to be closed at the end of the physical year; make journal entries to close income, expense, income summary and drawing accounts; post closing entries from the journal from the ledger accounts; and prepare a post closing trial balance using asset, liability and capital accounts.

8. reconcile a bank statement to adjust cash and journalize any adjustments which affect the cash account.

9. journalize the establishment of a petty cash account and journalize the reimbursement of a petty cash fund.

10. journalize the establishment of a change fund and journalize a cash-short-or-over situation with income.

11. calculate gross pay, overtime pay, and net pay; calculate withholding taxes and other deductions, and complete a payroll register

12. journalize the payroll register and the entry to pay employees.

13. calculate and journalize taxes to be paid by the employer, and journalize the payment of the employers payroll taxes.

OADM 162

WordPerfect I Student Outcomes:

Upon completion of the course the student will be able to:

1. utilize appropriate keystrokes/menu choices to perform the following WordPerfect functions: Loading and exiting the program; Basic editing and formatting; Saving and retrieving documents; Printing; File management; Search and replace; Block and move; Page formatting; Footnotes and endnotes; Spell-check; Thesaurus; Advanced editing and formatting; Macros; Merge; Document assembly; and Sort, select, and merge.

7. *use the word processing application of an integrated software package to perform the following functions: to create, save, retrieve, rename, copy, print, and delete a document/file; move within a document using the cursor movement keys; insert, delete, edit, underline, boldface, and center text; work with blocks of text; set tabs and margins; create headers, footers, footnotes, and endnotes; print blocks, pages, and multiple copies; use the search and replace functions; use the spell checker and thesaurus; use the function keys; and return to the integrated software menu.*[1]

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[1] *Should this language be incorporated into this course?*

ACCT 101

Financial Accounting Student Outcomes:

Upon completion of the course the student will be able to:

1. identify the users of Financial Statements.

2. describe a Balance Sheet and identify the major categories of accounts on a Balance Sheet; and identify the tools of analysis used by investors and other users of a Balance Sheet.

3. recognize commonly used asset, liability, and shareholder's equity accounts.

4. describe the general layout of an Income Statement and describe the tools of analysis as related to an Income Statement and a Balance Sheet.

5. identify the information supplied by the Statement of Charges in Shareholder's Equity.

6. define the purpose of the Statement of Cash Flows.

7. complete the Accounting Cycle by: Recording transactions of a service organization in a general journal; Posting from journal to ledger ("T" account and running balance); Preparing a trial balance (using 10-column work sheet); Preparing necessary end of period adjustment; Preparing adjusted trial balance and extending it in the work sheet to Income Statement/Balance Sheet; Preparing a formal Income Statement; and Preparing a formal Balance Sheet.

8. perform the following Accounting Functions for a merchandising concern: Record sales and purchase transactions; Identify applicable safeguards; Summarize and adjust data at end of period via a work sheet; prepare, in good form, a multiple-step income statement; analyze an income statement evaluating the adequacy of net income; and compute current ration and working capital.

9. record entries for maintenance of an imprest petty cash system.

10. prepare a bank reconciliation and the appropriate journal entries.

11. prepare entries to adjust for bad debt expectation based upon percent of sales or percent of receivables.

12. determine cost of goods sold and ending inventory under FIFO, LIFO, and weighted average inventory valuation methods.

13. compute inventory turnover, explaining why this ration is of interest to short term creditors.

14. determine the cost of plant assets.

15. distinguish between capital expenditures and revenue expenditures.

16. explain the relationship between depreciation and the matching principle.

17. compute depreciation by the straight-line, units-of-output, decline-balance, and sum-of-the-years'-digits methods.

18. explain why depreciation based upon historical costs may cause an overstatement of profits.

19. record the sale, trade-in, or scrapping of a plant asset.

ACCT 102

Managerial Accounting Student Outcomes:

Upon completion of the course the student will be able to:

1. define liabilities and distinguish between current and long-term liabilities; and distinguish between liabilities and owner's equity.

2. account for notes payable and the accrual of interest.

3. compute and explain the usefulness of the quick ratio, debt ratio, and interest coverage ratio.

4. define loss contingencies and explain the criteria determining their presentation in financial statements.

5. describe basic separation of duties in a payroll system and explain how the separation of responsibilities contributes to strong internal control.

6. identify factors involved in computing withholdings.

7. distinguish between and employee and an independent contractor and explain the significance of distinction with respect to withholding and payroll taxes.

8. distinguish between taxes withheld from an employee's paycheck and payroll taxes levied upon an employer.

9. explain the purpose of individual earnings records for each employee, showing the monthly earnings, cumulative earnings, and amounts withheld.

10. describe the basic characteristics of a partnership and discuss the advantages and disadvantages of this form of business organization.

11. distinguish between a regular partnership and a limited partnership.

12. perform the accounting for the formation of a partnership and divide the net income of a partnership among the partners.

13. perform the accounting functions for the admission of a new partner and the withdrawal a partner.

14. perform the accounting functions for the liquidation of a partnership.

15. discuss the advantages and disadvantages of organizing a business as a corporation.

16. explain the rights of stockholders and the roles of corporate directors and officers.

17. contrast the balance sheet presentation of the ownership equity in a corporation and in a sole proprietorship.

18. contrast the features of common stock and those of preferred stock.

19. perform the accounting functions for the issuance of capital stock.

20. discuss the factors affecting the market price of preferred stock and of common stock.

21. explain the meaning and significance of book value, market value, and par value of capital stock.

22. put a company's net income into perspective by relating it to sales, assets, and stockholders equity.

23. describe several sources of financial information about a business.

24. explain the uses of dollar and percentage changes, trend percentages, component percentages, and ratios.

25. compute the ratios widely used in financial statement analysis and explain the significance of each.

26. discuss the "quality" of a company's earnings, assets, and working capital.

27. analyze financial statements from the viewpoints of common stockholders, creditors, and others.

28. explain how fixed, variable, and semi-variable costs respond to changes in the level of business activity.

29. use the high-low method to separate the fixed and variable elements of a semi-variable cost.

30. explain contribution margin, and compute contribution margin per unit and contribution margin ratio.

31. prepare a cost-volume-profit (break-even) graph.

32. determine the sales volume required to earn a desired level of operating income.

33. use the contribution margin ration to estimate the effect upon operating income of changes in sales volume.

34. use cost-volume-profit relationships in evaluating various marketing strategies.

35. determine the sales mix that will maximize the contribution margin per unit of a scarce resource.

36. identify the financial information relevant to a particular business decision, and discuss the relevance of opportunity costs, sunk costs, and out-of-pocket costs in making business decisions.

37. determine the effect upon operating income of discontinuing a product line.

38. analyze a business decision and creatively search for a better course of action while maintaining an awareness of both the financial and non-financial considerations.

39. use incremental analysis to evaluate an alternative course of action.

40. evaluate capital budgeting proposals using the payback period, return on average investment, and discounted future cash flows.

41. discuss the benefits that a company may derive from a formal budgeting process, explain the two "philosophies" that may be used in setting budgeted amounts, and describe the elements of a master budget.

42. prepare any of the budgets or supporting schedules included in a master budget, and prepare a flexible budget and explain its usefulness.

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LEGL 261

Business Law I Student Outcomes:

Upon completion of the course the student will be able to:

1. discuss the background and framework of American Jurisprudence, and the expense and advisability of litigation.

2. discuss the criminal and civil liability within a business; and businesses rights under the constitution and criminal law substantive and procedural.

3. describe "offer" and "acceptance" in terms of basic contract law; and define "consideration".

4. summarize the basics of "statute of frauds" and "parol evidence."

5. describe the basic circumstances in which contracts may be rendered VOID, the remedies available, and third party interests.

6. explain the defenses an individual or a business could use to breach a contract entered into inadvertently.

7. identify the types of contracts unenforceable in a court of law because of their illegality.

8. discuss law concerning Third Party contracts.

9. recognize potential breach and extra-judicial remedies, and explain the effect of breach of contract.

BMGT 101

Introduction to Business Student Outcomes:

Upon completion of the course the student will be able to:

1. discuss the concept and implications of economic freedom, and list the major components of the capitalistic system.

2. evaluate the interaction and effects of the capitalistic system, the standard of living, and the environment of business.

3. explain the advantages and disadvantages of capitalism as opposed to other world systems.

4. explain why a business organization has obligations to satisfy the needs of customers, owners, employees, management, and governmental agencies.

5. summarize the interdependency of a business organization and federal, state, and local governments.

6. describe government activities that can be classified as regulatory and service functions.

7. explain why taxes may be used to regulate, provide services, or both.

8. explain what a business organization is and identify the people (groups) associated with a business organization.

9. identify the functions of management and describe the relationship of managerial functions and operative functions.

10. identify organizational objectives.

11. list the basic needs of man according to Maslow's theory.

12. explain an organizational chart.

13. recognize and compare the advantages and disadvantages of the forms of business ownership.

14. explain the dual objectives of a personnel/human resources department and identify the typical functions performed by the personnel/human resources department.

15. explain the workings of labor unions, their goals and structure.

16. define marketing as a process, and describe the marketing organization and its goals and objectives.

17. explain the relationship of form, time, place, and possession utility.

18. define a channel of distribution, and list the major channels of distribution for consumer and industrial goods.

19. distinguish between personal selling, non personal selling, and sales promotion and identify the advantages and disadvantages of each.

20. define communication channels, and identify and distinguish between the various communications media and their uses.

21. describe the function of advertising in business and discuss the traditional advertising media in terms of audience, costs, and markets reached.

22. explain the life cycle of a product.

23. describe the finance function as a separate business function with primary and secondary goals.

24. identify the sources of funds available to a business, calculate financial ratios, and describe basic financial statements.

FMGT 101

Personal Finance Student Outcomes:

Upon completion of the course the student will be able to:

1. List at least three reasons why personal financial planning is important and list three key components of a financial record system.

2. describe at least three problem situations that may arise from failing to keep financial records or improper financial record keeping.

3. list the necessary steps in developing a personal or family budget and develop a one month personal budget.

4. list the basic banking services.

5. list the danger signals of credit over-extension.

6. list the various loan sources in the order of increasing cost.

7. describe the various ways to reduce tax liabilities.

8. describe the various savings instruments.

9. list ways to be a better consumer.

10. compare the advantages and disadvantages of owning vs. renting.

11. list the alternatives of risk management.

12. list the principles of insurance.

13. describe the advantages and disadvantages of the various types of life insurance and determine how much life insurance to buy.

14. describe the types of health insurance, home owners insurance and auto insurance.

15. list the prerequisites to investing ways to accumulate investment funds.

16. rank the various types of investments in terms of risk and return.

17. list possible investment goals.

18. describe the advantages and disadvantages of stocks, bonds, and mutual funds.

19. list types of investment risk and describe methods for measuring rates of return.

20. estimate retirement income and expenses, and determine Social Security benefits.

21. describe various tax-sheltered retirement plans.

22. describe the requirements for vesting.

23. describe the various types of annuities, I.R.A.'s, and Keogh plans.

24. list the major provisions of a will and describe probate.

25. describe ways to use trusts to reduce estate taxes.

26. write a personal financial plan.

MCT 121

PC Operating Systems Student Outcomes:

Upon completion of the course the student will be able to:

1. define hardware and software, and explain the components of the systems unit and the difference between ROM and RAM.

2. differentiate between temporary and permanent memory.

3. explain the different types of disk drives, display adapter cards, printers, the parts of the keyboard, the function of adapter cards, and the use of tape backup, mouse, and modem devices.

4. boot the microcomputer, change the default drive, and print the current screen from DOS.

5. perform the following DOS functions: use DATE to change the system date, use TIME to change the system time, use VER to check the version of DOS loaded in RAM, use CLS command to clear the screen, and use PROMPT command to create a custom prompt.

6. define track, sector, cluster, directory, and File Allocation Table (FAT)

7. perform the following DOS formatting disk functions: use FORMAT to prepare a new disk for use, use the FORMAT/V option to put a volume label on a disk, use the FORMAT/S option to create a system disk, use FORMAT options to format double-density disks in high-density drives, use VOL to check the volume label, use LABEL to add, change, or delete a volume label, and use PATH to set an extended search path for DOS.

8. explain and create DOS "filenames" and "extensions."

9. perform the following DOS filename and directory functions: use DIR to list a directory, use CTRL-S or PAUSE to pause the screen, use DIR/P to pause a directory, use DIR/W to display a wide directory listing, use wildcards to display a selective directory listing, use input and output redirection, and use the filter commands of MORE, SORT, and FIND.

10. perform the following DOS file manipulation functions: use COPY to make copies of existing files, use XCOPY to make a selective copy of a diskette, use DISKCOPY to make a copy of a diskette, use REN to rename files, use DEL to erase files, use ATTRIB to give a file read-only status, and use CHKDSK to display disk and RAM status reports.

11. explain the purpose of a DOS subdirectory system.

12. perform the following DOS subdirectory functions: use the MD command to create subdirectories, use the CD command to change the current subdirectory, use the RD command to erase a subdirectory, use the COPY command to copy files to subdirectories, use the XCOPY command to copy a subdirectory system, and use the TREE command to display the subdirectory system.

13. explain the purpose of DOS Batch files and an AUTOEXEC.BAT file.

14. perform the following DOS Batch file functions: use the COPY CON: command to create an ASCII file, execute an AUTOEXEC.BAT file, use EDLIN to create and edit and ASCII file, and use the TYPE command to display an ASCII file.

15. explain the function and components of a Windows microcomputer system.

16. explain the purpose, advantages, equipment necessary for Microsoft Windows (3.1 or higher).

17. perform the following Windows functions: start and exit Windows, use the mouse to select menus, commands, and icons, start and exit an application, control the size and placement of a window, and obtain help on any subject in Windows.

18. perform the following Windows program management functions: switch among different application windows, organize application windows and application icons, exit applications safely, use and recognize group windows and program icons, customize Program Manager by adding program icons and group windows, copy and move program icons, organize program icons and group windows, and delete program icons and group windows.

19. perform the following Windows file management functions: view directories and files on a disk; change the way file information is displayed; prepare and maintain disks for storing files; name, locate, select, rename, move, copy, and delete directories and files; start an application from File Manager; and view and print text files.

20. perform the following Windows wordprocessing functions using the Write option: create and navigate within a document, save and retrieve a document, edit document, print a document, format a document.

21. perform the following Windows graphics functions using the Paintbrush option: use a variety of graphic tools to create a drawing, save and retrieve a drawing, print a drawing, develop a drawing in an effective and systematic manner.

22. perform the following Windows transfer of data between applications functions: transfer images from Paintbrush to

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Write using Clipboard; move and size a graphic image inside a Write document, save and open Clipboard files, capture windows and screens using Clipboard, and edit the captured images using Paintbrush.

CPT 108

Program Design and Development Student Outcomes:

Upon completion of the course the student will be able to:

1. list and describe the five steps in writing a program.
2. explain the concepts of input and output areas and how they are used in a program.
3. write a flowchart for a program involving basic input/output operations.
4. write a flowchart for a program involving the use of calculations across detail lines and the accumulation of totals.
5. write a flowchart for a program involving the use of value comparison and control codes.
6. write a flowchart for a program with a closed heading subroutine and a program switch.
7. write a flowchart for a program involving the use of major, intermediate, and minor total in which the program logic may involve the use of a priming read or switch.
8. write a flowchart for a program using sequential table search logic.
9. write a flowchart for a program using binary table search logic.
10. write a flowchart for a program using an internal sort.
11. write a flowchart for a sequential update in place with one transaction per master program.
12. write a flowchart for a sequential update in place with multiple transactions per master program.
13. write a flowchart for a sequential update program creating a new master file with adds, deletes, and changes.

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CPT 151

BASIC Business Language Student Outcomes:

Upon completion of the course the student will be able to:

1. identify the basic computer hardware units.
2. explain the purpose of programs, program translation, systems programs, and user programs.
3. draw a simple flowchart given a sample BASIC program.
4. create a BASIC program using the LET statement, formula processing, PRINT, REM, variables and constants.
5. create a BASIC program using branching and decision statements.
6. create a BASIC program with the use of string data, DATA, READ, and RESTORE statements.
7. create a BASIC program that loops using FOR/NEXT statements
8. create a BASIC program that handles two dimensional arrays.
9. create a BASIC program that handles subroutines and functions using the GOSUB and DEF statements.
10. create a BASIC program that will read and list sequential files.

MCT 131

Advanced LOTUS 1-2-3 Student Outcomes:

Upon completion of the course the student will be able to:

1. list the three major components of a spreadsheet and explain how they interact in the LOTUS 1-2-3 WINDOWS environment.

2. define and explain the use of LOTUS 1-2-3 WINDOWS MENUS, dialogue boxes, HELP, and Smart ICONS.

3. correctly apply absolute and relative cell adjustment using the MOVE and COPY statements.

4. correctly apply the use of a complex @IF statement to validate criteria in a spreadsheet.

5. design a viable spreadsheet to be used for creating charts.

6. develop visually desirable charts given specifications for a spreadsheet design.

7. create, maintain, and access a LOTUS database.

8. analyze a database through the use of queries and database functions.

9. create interactive screen displays through the use of macros and icons.

MCT 141

Introduction to Database Systems Student Outcomes:

Upon completion of the course the student will be able to:

1. list the characteristics and limitations of dBASE III Plus.
2. use the groups of commands contained in assistant menu.
3. generate a report using the dBASE III Plus report generator.
4. sort index files.
5. generate a report using the dBASE III Plus REPORT FORM command.
6. create edit screens with a variety of edit checks.
7. maintain multiple files using the VIEW and UPDATE commands.

MCT 211

Information Presentation Student Outcomes:

Upon completion of the course the student will be able to:

1. explain the use of presentation graphics as a tool to influence and support business decisions.

2. list and explain the fundamental elements and terminology used in graphing.

3. select the appropriate chart format for an effective presentation given a set of data.

4. demonstrate proficiency in the use of presentation graphics software.

5. develop and present a final project that incorporates all aspects of information presentation graphics.

MCT 215

Microcomputer Fundamentals Student Outcomes:

Upon completion of the course the student will be able to:

1. list and explain the basic components of a microcomputer system.

2. identify appropriate hardware and software purchases for a single-user microcomputer system based upon a given set of specifications.

3. identify appropriate hardware and software purchases to create a LAN microcomputer system, including a back-up and recovery plan, for a small business based upon a given set of specifications.

4. create a batch file with 7 parameters to do the following: preserve the existing PATH as an environmental variable; use the first command line parameter as the new PATH to the DOS directory on the system disk; format the disk in drive **B:** as a system disk; create a directory structure based on specific data, using the command line parameters 3-7 as the subdirectory names; change the default directory of drive **B:** to the subdirectory created with parameter 5; copy the file specified by command line parameter 2 to the current subdirectory of **B:**; sort the file to a temporary file, print the sorted file, and restore the old PATH.

5. install RAM memory, memory cards, video cards, and other types of I/O devices.

6. perform basic microcomputer system installation and configuration, and routine maintenance.

MCT 221

Local Area Networks Student Outcomes:

Upon completion of the course the student will be able to:

1. explain the advantages and disadvantages of different data networking systems, operating systems, and devices.
2. list the characteristics of the following: A B switches; print buffers, data switches, zero slot LANS; multi-users; DOS systems; media sharing; and LANS.
3. create a "logon" disk batch file.
4. describe the general characteristics of media sharing local area networks.
5. add users to a network system, create "logon" scripts, assign trustee rights to users and groups of users, and create a print server using Novell software.
6. describe the general characteristics of "peer to peer" DOS network software.
7. add users to a LAN network, create systems resources and assign to users, provide user security, execute the "chat" and electronic mail features using Lantastic software.
8. describe the general characteristics of "Banyan Vines."
9. create systems resources and assign to users; add groups and organizations; create user profiles; create administration lists to maintain security using Banyan Vines software.
10. globally name systems using "street talk."

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MCT 241

Office Automation Student Outcomes:

Upon completion of the course the student will be able to:

1. explain the concepts of office automation and its application to organizations.

2. explain the role of the microcomputer workstation in cooperative processing when attached to a network host server.

3. perform appropriate administrative support by creating calendars, schedules, and reminders.

4. perform the directory management functions of an AS400 system.

5. perform document filing and retrieving functions on an AS400 system.

6. create documents using the wordprocessing capabilities of the AS400 system.

MCT 251

Introduction to Systems Analysis Student Outcomes:

Upon completion of the course the student will be able to:

1. identify problem characteristics, create a rough problem definition, and outline a problem solution.

2. state the economic impact of poor forms design.

3. use the steps in forms design to develop input and output forms, and design and create files based on given specifications.

4. describe the appropriate processing methods, and list the steps in developing and implementing a system based on given specifications.

CPT 101

Computer Literacy I for Windows Student Outcomes:

Upon completion of the course the student will be able to:

1. define computer literacy and explain why computer literacy is important in today's Information Age.
2. list both personal and business circumstances under which computers may be used.
3. distinguish between hardware and software.
4. list and describe the main categories of application software.
5. discuss the potential disadvantages in using computers.
6. compare and contrast the positive and negative effects of computers on society.
7. list and describe the basic hardware components of a computer system.
8. explain how data is stored in computer memory.
9. explain the difference between operating system software and application software.
10. list and describe the selection devices and commercial input devices that are available on a computer system.
11. compare and contrast the features of printers and plotters.
12. list and describe the features of display units that are commonly available on computer systems.
13. explain how data are organized into fields, records, and files.
14. compare and contrast the characteristics of tape, and internal and external disk storage devices.
15. define the term "upward compatible" as it relates to different versions of an operating systems and software applications.
16. describe how to run a program using a command line system and a Graphic User Interface (GUI).
17. describe the file management operations and maintenance tasks for a GUI operating system.

18. describe the features on commercial application packages that aid the user.

19. define the term "integrated program" and indicate the reasons for software integration.

20. compare the various types of user interfaces and how they affect the user.

21. compare the features found in different word processing packages.

22. describe the parts of a word processing screen display.

23. explain what is meant by the term WYSIWYG.

24. perform the four basic editing operations.

25. perform block operations and use the search and replace feature.

26. apply the text formatting features available on word processors.

27. describe and apply some of the advanced features provided by word processing packages.

28. explain how a spreadsheet program stores and displays data.

29. retrieve and view spreadsheet data.

30. explain the difference between ready, entry, and command modes.

31. create and describe the difference between labels, formulas, and functions.

32. explain and apply the commands and procedures for revising and rearranging data in a worksheet.

33. explain the difference between and indicate the advantages of one-letter menu bars and keyword menu bars.

34. describe and apply the options available for formatting and printing worksheet data.

35. describe a "template," explain the techniques that can be used for designing templates, and list possible application areas.

36. describe and apply the features that are used to change the appearance of a worksheet.

37. apply the techniques for transferring information from one worksheet to another.

38. describe the different types of user interfaces for file management systems.

39. describe and apply file processing operations available on file management systems.

40. describe the characteristics of a good report generator.

41. generate a report using a report generator.

42. list and describe the features available in a database management system.

43. describe the purpose of a modem.

44. explain the necessity of a modem in computerized telecommunications.

45. list the features of communications software.

46. describe the services available through the use of computerized telecommunications.

47. describe the topologies used in networking.

48. describe the features of a local area network (LAN).

49. describe the uses of graphic software.

50. describe the types of graphs produced by graphic software.

51. compare bit-matted and vector graphic editors and list appropriate usages of each.

52. explain the purpose of project management and integrated software, and describe the charts produced by each.

53. describe the functions of office automation.

54. explain the effects of ergonomics on office automation.

55. describe the role of the information center.

56. describe the ways robots are used in manufacturing.

57. list some of the financial and banking computer applications.

58. describe how computers are being used to automate the health,

59. describe how computers are being used to automate some professions.

60. discuss some of the applications, and positive and negative impacts on society, of computerization in federal and local governments and law enforcement.

61. describe some of the applications of computers in education and artistic endeavors.

62. describe some of the scientific applications of computers.

63. describe some of the threats to and defenses of privacy generated by the use of computers.

64. explain some of the types of and safeguards against computer crimes.

65. list possible future developments in computing.

66. use an elementary integrated software package.

CPT 105

Introduction to Computer Applications Student Outcomes:

Upon completion of the course the student will be able to:

1. care for, handle, and write-protect a floppy disk.

2. perform a warm and cold boot.

3. use the print screen and print echo functions.

4. describe, write, and select appropriate file specifications for both disk operating systems (DOS) and graphic user Interface (GUI) operating systems.

5. use the following DOS commands: DIR, FORMAT, COPY, DISKCOPY, RENAME, DELETE, CHKDSK, and TYPE.

6. use a complex GUI integrated software package to perform word processing, spreadsheet, and database applications.

7. use the word processing application of an integrated software package to perform the following functions: create, save, retrieve, rename, copy, print, and delete a document/file; move within a document using the cursor movement keys; insert, delete, edit, underline, boldface, and center text; work with blocks of text; set tabs and margins; create headers, footers, footnotes, and endnotes; print blocks, pages, and multiple copies; use the search and replace functions; use the spell checker and thesaurus; use the function keys; and return to the integrated software menu.

8. use the spreadsheet application of an integrated software package to perform the following functions: create, save, retrieve, print, and delete a spreadsheet; move the cell pointer within a worksheet; use the Help function; enter labels, values, and formulas; copy, change the format, and move the ranges of cells; create formulas with and without using functions; describe and apply relative and absolute cell references in a formula; apply the manual and automatic methods of recalculation; create and use range names; and create and print graphs.

9. use the database application of an integrated software package to perform the following functions: create, save, retrieve, print, and delete a database; distinguish between a database file, record, and field; use the Help function; create and modify a database structure; enter, view, and edit the data in a database file; sort and index records; and create, modify, and print a report.

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10. use the integrated software package to exchange data among the three types of applications.

MCT 106

Computer Literacy II Student Outcomes:

Upon completion of the course the student will be able to:

1. care for, handle, and write-protect a floppy disk.

2. perform a warm and cold boot.

3. use the print screen and print echo functions.

4. describe, write, and select appropriate file specifications for both disk operating systems (DOS) and graphic user Interface (GUI) operating systems.

5. use the following DOS commands: DIR, FORMAT, COPY, DISKCOPY, RENAME, DELETE, CHKDSK, and TYPE.

6. use a complex GUI integrated software package to perform word processing, spreadsheet, and database applications.

7. use the word processing application of an integrated software package to perform the following functions: create, save, retrieve, rename, copy, print, and delete a document/file; move within a document using the cursor movement keys; insert, delete, edit, underline, boldface, and center text; work with blocks of text; set tabs and margins; create headers, footers, footnotes, and endnotes; print blocks, pages, and multiple copies; use the search and replace functions; use the spell checker and thesaurus; use the function keys; and return to the integrated software menu.

8. use the spreadsheet application of an integrated software package to perform the following functions: create, save, retrieve, print, and delete a spreadsheet; move the cell pointer within a worksheet; use the Help function; enter labels, values, and formulas; copy, change the format, and move the ranges of cells; create formulas with and without using functions; describe and apply relative and absolute cell references in a formula; apply the manual and automatic methods of recalculation; create and use range names; and create and print graphs.

9. use the database application of an integrated software package to perform the following functions: create, save, retrieve, print, and delete a database; distinguish between a database file, record, and field; use the Help function; create and modify a database structure; enter, view, and edit the data in a database file; sort and index records; and create, modify, and print a report.

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10. use the integrated software package to exchange data among the three types of applications.

Competency Documentation Sheet

Central Ohio Tech Prep Consortium
Computerized Business Technology Tech Prep Program
School Name: Eastland Career Center
Course Title: **APPLIED COMMUNICATIONS 11**

The following competencies are covered in this course:

*1.01.01.00	Differentiate between fact, opinion, and inference.
*1.01.02.00	Cite details that support or do not support predictions.
*1.01.03.00	Recognize the intended use of propaganda.
*1.01.04.00	Identify and summarize ideas, information, and events that are explicitly stated in written material.
*1.01.05.00	Explain the sequence of time, places, events, and ideas.
*1.01.06.00	Identify and explain the main and subordinate ideas (stated or implied) in a written work.
*1.01.09.00	Use the features of books and reference materials such as table of contents, preface, introduction, titles and subtitles, index, glossary, appendix, and bibliography.
*1.01.10.00	Define and use unfamiliar words and specialized vocabulary (including abbreviations, acronyms, concepts, and jargon) by using structural analysis, decoding, contextual cues, dictionaries, and computers.
*1.01.11.00	Read and understand short notes, memos, letters, and forms.
*1.01.13.00	Determine the author's purpose.
*1.01.14.00	Read, evaluate, and respond critically to various literature forms, genres, and printed media.
*1.01.16.00	Identify the structural elements of literature (e.g., plot, theme, character, mood, setting, and point of view).
*1.01.17.00	Identify literary devices (e.g., metaphor, foreshadowing, flashback, allusion, satire, and irony).
*1.02.01.00	Give oral directions and clear explanations.
*1.02.03.00	Demonstrate correct usage of vocabulary.
*1.02.05.00	Speak effectively using non-verbal communication such as eye contact, posture, and gestures.
*1.02.06.00	Select topics suitable to audience, situation, and purpose.
*1.02.08.00	Give formal and informal talks and speeches.
*1.02.10.00	Use visual media.
*1.02.11.00	Demonstrate proper telephone etiquette.
*1.03.04.00	Apply writing process techniques: 1) Prewriting, 2) Drafting, 3) Revising, 4) Editing/proofreading, 5) Publishing.
*1.03.06.00	Develop and maintain a professional writing portfolio.
*1.04.01.00	Follow spoken directions.
*1.04.02.00	Distinguish between fact and opinion.
*1.04.03.00	Make inferences and draw conclusions from verbal and non-verbal messages.
*1.04.05.00	Restate or paraphrase a conversation to confirm one's own understanding of what was said.
*1.04.06.00	Take accurate notes which summarize material presented from spoken conversations, including telephone messages.
*1.04.07.00	Demonstrate an understanding of appeals used to sell a product or service, analyze advertising, and either individually or as a member of a team, produce a persuasive request approach letter.
1.04.08.00	Demonstrate an understanding of the laws regarding credit and collection, and the roles of the credit bureau and written communications in the collection process.
1.04.09.00	Set up and conduct a meeting.

Competency Documentation Sheet

Central Ohio Tech Prep Consortium
Computerized Technology Tech Prep Program
School Name: Eastland Career Center
Course Title: **APPLIED COMMUNICATIONS 12**

The following competencies are covered in this course:

*1.01.07.00	Apply interpretive level comprehension skills to generate ideas and/or hypotheses about the content.
*1.01.08.00	Find, understand, interpret, and apply information from a variety of sources (books, manuals, newspapers, periodicals, directories, reference works, computer printouts, and electronic sources).
*1.01.12.00	Read and follow complex directions.
*1.01.15.00	Recognize and interpret organizational patterns of writing e.g., cause and effect, comparison and contrast, and simple listing).
*1.01.18.00	Explore and analyze a variety of cultural elements, attitudes, beliefs, and value structures through reading.
*1.02.02.00	Participate critically and constructively in the exchange of ideas, particularly during class discussions and conferences with individuals.
*1.02.03.00	Demonstrate correct usage of vocabulary.
*1.02.04.00	Demonstrate an awareness and understanding of interpersonal communicaiton skills (verbal and non-verbal) in one-to-one and small group settings role playing.
*1.02.07.00	Demonstrate effective speaking skills in seeking employment and in utilizing management skills on the job.
*1.02.08.00	Give formal and informal talks and speeches.
*1.02.09.00	Demonstrate the difference between informing and persuading and use the appropriate techniques of content and delivery for each purpose.
*1.02.10.00	Use visual media.
*1.03.01.00	Demonstrate ability to use different forms of writing (e.g., literary response, business and technical communicative modes, personal responses, journals, research and recording).
*1.03.02.00	Demonstrate appropriate selection of mode, purpose, audience, point of view, and organization of information in written assignments.
*1.03.03.00	Demonstrate expertise in word processing, graphics, and/or desktop publishing aids for writing.
*1.03.04.00	Apply writing process techniques: 1) Prewriting, 2) Drafting, 3) Revising, 4) Editing/proofreading, 5) Publishing
*1.03.05.00	Demonstrate ability to evaluate written assignments using a diagnostic rubric.
*1.03.06.00	Develop and maintain a professional writing portfolio.
*1.04.04.00	Identify and comprehend the main and subordinate ideas in lecture and discussions, questions to clarify information heard, and report accurately what others have said.
*1.04.05.00	Restate or paraphrase a conversation to confirm one's own understanding of what was said.
*1.04.07.00	Recognize multi-cultural differences when listening.
*1.05.01.00	Read and understand graphs, charts, and tables to obtain factual information.
*1.05.02.00	Produce and utilize effective communication skills in the development of graphs, tales,a nd charts to communicate ideas.
*1.05.03.00	Critically view historical or contemporary events, via TV or video tape, and make appropriate observations.
*1.05.04.00	Analyze the effects of advertising and other visual media for direct and hidden messages, including propaganda devices.
*1.05.05.00	Communicate through use of video tape and computer presentations.
*1.05.06.00	Prepare for and appropriately present qualifications in an interview.

HEART of OHIO TECH PREP CONSORTIUM

Revised, 1996

Computerized Business Technologies Model

PART II.B:
Secondary Tech Prep
Academic Competencies (Unleveled)

HEART of OHIO TECH PREP CONSORTIUM

SECONDARY ACADEMIC COMPETENCIES

Reviewed & approved, October 1997

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PREFACE
How to Use This Competency List

The competencies listed in this document are exit competencies for the secondary component of Tech Prep programs. They represent what Tech Prep high school students are expected to be able to do by the end of grade 12.

Information offered in this preface includes:

- Philosophy underpinning Tech Prep academics
- Mathematics education as an example
- Bottom line for Tech Prep academics instruction
- Matrix indicating core and program-specific academic competencies
- Notes on organization of the competency list
- Acknowledgements

Background: What's Different about Tech Prep Academic Competencies?

Tech Prep is a systemic educational reform movement intended to prepare students for the technology-based occupations of the coming century. Here are some key points to know about Tech Prep secondary academics:

- ✔ Tech Prep academics are college preparatory academics for concrete learners. (That's 90% of all of us.)

- ✔ The goal is to prepare Tech Prep students to enter the college of their choice without the need for academic remediation.

- ✔ What makes Tech Prep academics different from traditional college prep academics is not the content. It is the way in which it is taught.

The following section uses *mathematics* as an example to illustrate the necessity for this approach, and some related methodologies.

Mathematics: A Prime Example

If we accept the premise that Tech Prep programs will demonstrate systemic educational change by providing new, creative, and innovative options for students, then we must agree that what has passed for mathematics education in the past will not and can not continue as mathematics education in the future.

The follow excerpts from current literature support this position:

> Evidence from many sources shows that the least effective mode for mathematics learning is the one that prevails in most of America's classrooms: lecturing and listening. Despite daily homework, for most students and most teachers mathematics continues to be primarily a passive activity: teachers prescribe; students transcribe. Students simply do not retain for long what they learn by imitation from lectures, worksheets, or routine homework. Presentation and repetition help students do well on standardized tests and lower-order skills, but they are generally ineffective as teaching strategies for long-term learning, for higher-order thinking, and for versatile problem solving. (National Research Council. Everybody Counts — A Report to the Nation on the Future of Mathematics Education. 1989, p. 57.)

The National Council of Teachers of Mathematics have proposed five general goals for all K-12 students:

1. That students learn to value mathematics,
2. That students become confident in their ability to do mathematics,
3. That students become mathematics problem-solvers,
4. That students learn to communicate mathematically, and
5. That students learn to reason mathematically....

> Toward this end, we see classrooms as places where interesting problems are regularly explored using important mathematical ideas. Our premise is that ***what*** a student learns depends to a great degree on ***how*** he or she has learned it.... This vision sees students studying much the same mathematics currently taught, but with quite a different emphasis. (NCTM. Curriculum and Evaluation Standards for School Mathematics. 1989, p. 5.)

For NCTM's vision for mathematics education to be realized, the vision of how students learn mathematics must shift "toward investigating, formulating, representing, reasoning, and applying a variety of strategies to the solution of problems . . . and away from being shown or told, memorizing and repeating.... {And the} role of teachers toward 'questioning and listening' . . . and away from 'telling' students what to do..." (NCTM, Assessment Standards for School Mathematics,1995, p. 2).

Alternative methods for delivery of mathematics education should address the following:

1. Students should experience mathematics as active, engaging, and dynamic.
2. Mathematics instruction should at all times make appropriate use of technology, especially graphing calculators and computers.
3. Mathematics courses should make extensive use of writing assignments, open-ended projects, and cooperative learning groups.
4. Faculty should use a variety of teaching strategies and should employ a broad range of examples.

(Mathematical Sciences Education Board. Expectations for Mathematics Education from High School through Career.)

The Bottom Line for Teaching

As shown above, we can not continue to teach mathematics — or for that matter, any high school academics — the way they have always been taught. The Heart of Ohio Tech Prep Consortium officially encourages the kind of systemic change spelled out in the example just presented using mathematics education.

In other words, TECH PREP HIGH SCHOOL ACADEMIC INSTRUCTION SHOULD --

- ☞ Focus on developing critical thinking and problem-solving skills
- ☞ Incorporate cooperative learning techniques
- ☞ Include written group projects, developed in conjunction with business and industry, that address real-world problems
- ☞ Actively embrace career development and school-to-work opportunities
- ☞ Encourage global thinking and learning through multidisciplinary instruction, projects, and experiences

Core Academic Competencies and Program-Specific Competencies

The matrix on the next page shows--

1. Core competencies required of ALL TECH PREP STUDENTS by the time they complete high school.
2. Program-specific competencies required by the end of grade 12 FOR STUDENTS WHO SELECT A PARTICULAR TECH PREP SECONDARY PROGRAM that is linked with one or more college Tech Prep programs.

Important notes:

- ✔ The grade and sequence in which Tech Prep academic competencies are taught are up to the local school (though in some cases, this is determined naturally by progression of prerequisite skills).
- ✔ Regardless of the sequence, every student completing a high school Tech Prep program should have attained the academic competencies

(both core and program-specific) by the time he or she completes the high school Tech Prep program.

- ✔ The core competencies and program-specific competencies required by the end of grade 12 are the minimum requirements for successful completion of the high school Tech Prep program and subsequent matriculation into a college Tech Prep program. If time and resources allow, any school may choose to enrich its Tech Prep programs by teaching additional competencies that enhance the students' college and/or employment readiness.

- ✔ Instructors will notice that competencies listed in their discipline are generally equivalent to the college prep content they already teach (e.g., Algebra I, Geometry, Biology, Global History, etc.).

- ✔ Schools are advised to retain traditional names for academic courses (e.g., Algebra II, English IV) on the student's official transcript, to support their acceptance by selective-admissions colleges and universities, as well as for scholarship eligibility (e.g., NCAA). Although schools may organize and sequence Tech Prep academic course content differently from traditional college preparatory courses, students should have attained all of the requisite competencies by the end of grade 12, thereby addressing the expectations of these organizations.

MATRIX NO. 1:
CORE ACADEMIC COMPETENCIES
REQUIRED OF ALL TECH PREP STUDENTS
BY THE END OF GRADE 12

ACADEMIC COMPETENCIES				Individual Development Competencies	Technology Literacy Competencies	Professional Options (Technical & Employability Competencies)
Communications Literacy*	Mathematics Literacy*	Science Literacy*	Social/Cultural Literacy*			
All competencies listed	• Algebra • Numbers & number relations • Data analysis & probability	• Lab safety procedures • Scientific process • Biology/ecology	All competencies listed	All competencies listed	All competencies listed	See specific program model (separate document)
*Four years of college-prep English	*Minimum three years of college prep mathematics -- see Matrix No. 2 for additional program-specific requirements	*Minimum two years of lab science, one of which is biology — see Matrix No. 2 for additional program-specific requirements	*Four years of college-prep humanities			

MATRIX NO. 2:
ADDITIONAL ACADEMIC COMPETENCIES
REQUIRED FOR SPECIFIC TECH PREP PROGRAMS
IN GRADES 11-12*

(*In addition to core competencies required of all students)

TECH PREP PROGRAM MODEL (Gr. 11-12)	Mathematics Literacy Competencies*	Science Literacy Competencies*	Professional Options Competencies (Technical & Employability)
Automotive/Diagnostic Technologies	• Geometry • Technical Algebra	• Chemistry • Physics	See separate program model documentation
Business Technologies Core Model:			
▪ Computerized Business Technology (CBT) Career Major	• Geometry • Technical Algebra	• Chemistry or Physics *(recommended but not required)*	See separate program model documentation
▪ Business Management Career Major *(in process)*	TBA	TBA	TBA
Construction Technologies	• Technical Algebra • Geometry and/or Technical Trigonometry *(recommended but not required)*	• Physics • Chemistry *(recommended by not required)*	See separate program model documentation
Engineering Technologies Core Model:			
▪ Architecture/ Construction Career Major	Select two: • Technical Algebra • Geometry • Technical Trigonometry	• Chemistry • Physics	See separate program model documentation

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MATRIX NO. 2:
ADDITIONAL ACADEMIC COMPETENCIES REQUIRED FOR SPECIFIC TECH PREP PROGRAMS IN GRADES 11-12*

(*In addition to core competencies required of all students)

TECH PREP PROGRAM MODEL (Gr. 11-12)	Mathematics Literacy Competencies*	Science Literacy Competencies*	Professional Options Competencies (Technical & Employability)
Engineering Core Model program, continued: • Design Engineering Career Major • Electronics Technology Career Major • Graphic Communications Career Major • Landscape Career Major • Manufacturing Career Major	Select two: • Technical Algebra • Geometry • Technical Trigonometry	• Chemistry • Physics	See separate program model
Environmental Technologies	• Geometry • Technical Algebra	• Chemistry • Environmental Geology *(specific to this program; see separate program model documentation)*	See separate program model documentation
Information Engineering Technologies	• Geometry • Technical Algebra	• Chemistry • Physics	See separate program model documentation
Multi-Competency Health Technologies ("Allied Health")	• Technical Algebra	• Chemistry	See separate program model documentation

Notes on Organization of the Competency List

- **Numbering format:**
  Category
  Subcategory
  Competency (*9.03.12.00)
  Competency Builder (9.03.12.11)

- An asterisk (*) indicates that the statement is a competency. Others are competency builders. Competency statements always end with ".00" in the builder columns.

- Categories:
  1 = Communications Literacy . . . . . 47 competencies
  2 = Individual Development . . . . . 11 competencies
  3 = Mathematics Literacy . . . . . 30 competencies
  4 = Science Literacy . . . . . 16 competencies
  5 = Social/Cultural Literacy . . . . . 21 competencies
  6 = Technology Literacy . . . . . 26 competencies
  151 total

- Professional Options (technical) competencies are not included. The set of specific technical competencies used will depend on the particular Tech Prep program model. These are contained in separate documents available from each school's representative to the Tech Prep Consortium Implementation Committee.

- Communications Literacy competencies do not include builders.

- Individual Development category does not include subcategories.

Acknowledgements

The original version of this competencies list (1992-94) was developed and reviewed by over 80 representatives of K-12 and higher education institutions as well as members of business, industry, and labor organizations who donated their time to help Tech Prep get on its feet in Central Ohio. The current version was reviewed and approved by representatives of Ohio University, Columbus State Community College, and the Curriculum Pathways Committee of the Heart of Ohio Tech Prep Consortium. The preface was prepared by Leigh Trapp, Larry Lance, and Connie Faddis. A special thank you goes to Dr. John Furlow of OU-Lancaster, Dr. David Hockenbery of Columbus State, and Larry Lance of Columbus State.

COMMUNICATIONS LITERACY COMPETENCIES

Effective Reading Skills

*1.01.01.00 Differentiate between fact, opinion, and inference.

*1.01.02.00 Cite details that support or do not support predictions.

*1.01.03.00 Recognize the intent and use of propaganda.

*1.01.04.00 Identify and summarize ideas, information, and events that are explicitly stated in written material.

*1.01.05.00 Explain the sequence of time, places, events, and ideas.

*1.01.06.00 Identify and explain the main and subordinate ideas (stated or implied) in a written work.

*1.01.07.00 Apply interpretive level comprehension skills to generate ideas and/or hypotheses about the content.

*1.01.08.00 Find, understand, interpret, and apply information from a variety of sources (books, manuals, newspapers, periodicals, directories, reference works, computer printouts, and electronic sources).

*1.01.09.00 Use the features of books and reference materials, such as table of contents, preface, introduction, titles and subtitles, index, glossary, appendix, and bibliography.

*1.01.10.00 Define and use unfamiliar words and specialized vocabulary (including abbreviations, acronyms, concepts, and jargon) by using structural analysis, decoding, contextual cues, dictionaries, and computers.

*1.01.11.00 Read and understand short notes, memos, letters, and forms.

*1.01.12.00 Read and follow complex directions.

*1.01.13.00 Determine the author's purpose.

*1.01.14.00 Read, evaluate, and respond critically to various literature forms, genres, and printed media.

*1.01.15.00 Recognize and interpret organizational patterns of writing (e.g., cause and effect, comparison and contrast, and simple listing).

*1.01.16.00 Identify the structural elements of literature (e.g., plot, theme, character, mood, setting, and point of view).

*1.01.17.00 Identify literary devices (e.g., metaphor, foreshadowing, flashback, allusion, satire, and irony).

*1.01.18.00 Explore and analyze a variety of cultural elements, attitudes, beliefs, and value structures through reading.

Effective Speaking and Presentation Skills

*1.02.01.00 Give oral directions and clear explanations.

*1.02.02.00 Participate critically and constructively in the exchange of ideas, particularly during class discussions and conferences with individuals.

*1.02.03.00 Demonstrate correct usage of vocabulary.

*1.02.04.00 Demonstrate an awareness and understanding of interpersonal communication skills (verbal and nonverbal) in one-to-one and small group settings (role playing).

*1.02.05.00 Speak effectively using nonverbal communication such as eye contact, posture, and gestures.

*1.02.06.00 Select topics suitable to audience, situation, and purpose.

*1.02.07.00 Demonstrate effective speaking skills in seeking employment and in utilizing management skills on the job.

*1.02.08.00 Give formal and informal talks and speeches.

*1.02.09.00 Demonstrate the difference between informing and persuading and use the appropriate techniques of content and delivery for each purpose.

*1.02.10.00 Use visual media.

*1.02.11.00 Demonstrate proper telephone etiquette.

Effective Writing Skills

*1.03.01.00 Demonstrate ability to use different forms of writing (e.g., literary response, business and technical communicative modes, personal responses, journals, research and recording).

*1.03.02.00 Demonstrate appropriate selection of mode, purpose, audience, point of view, and organization of information in written assignments.

*1.03.03.00 Demonstrate expertise in word processing, graphics, and/or desktop publishing aids for writing.

*1.03.04.00 Apply writing process techniques: 1) Prewriting, 2) Drafting, 3) Revising, 4) Editing/proofreading, 5) Publishing.

*1.03.05.00 Demonstrate ability to evaluate written assignments using a diagnostic rubric.

*1.03.06.00 Develop and maintain a professional writing portfolio.

Listening Skills

*1.04.01.00 Follow spoken directions.

*1.04.02.00 Distinguish between fact and opinion.

*1.04.03.00 Make inferences and draw conclusions from verbal and nonverbal messages.

*1.04.04.00 Identify and comprehend the main-and subordinate ideas in lecture and discussions, questions to clarify information heard, and report accurately what others have said.

*1.04.05.00 Restate or paraphrase a conversation to confirm one's own understanding of what was said.

*1.04.06.00 Take accurate notes which summarize material presented from spoken conversations, including telephone messages.

*1.04.07.00 Recognize multi-cultural differences when listening.

Critical Viewing/Graphic/Observation Skills

*1.05.01.00 Read and understand graphs, charts, and tables to obtain factual information.

*1.05.02.00 Produce and utilize effective communication skills in the development of graphs, tables, and charts to communicate ideas.

*1.05.03.00 Critically view historical or contemporary events, via TV or video tape, and make appropriate observations.

*1.05.04.00 Analyze the effects of advertising and other visual media for direct and hidden messages, including propaganda devices.

*1.05.05.00 Communicate through use of video tape and computer presentations.

INDIVIDUAL DEVELOPMENT

*2.00.01.00 Apply critical thinking skills to personal, family, and work problems for the well-being of self and others

2.00.01.01 Differentiate between facts and assumptions.

2.00.01.02 Develop inferences from data.

2.00.01.03 Demonstrate an ability to evaluate arguments.

2.00.01.04 Utilize deductive logic by predicting specific phenomena from general statements.

*2.00.02.00 Apply problem-solving process to personal, family, and work-related problems for well-being of self and others

2.00.02.01 Analyze and clarify own value structure.

2.00.02.02 Evaluate the relationship between values and goals

2.00.02.03 Establish priorities for short and long-term goals

2.00.02.04 Describe the importance of flexibility when reevaluating goals

2.00.02.05 Manage resources to achieve goals

2.00.02.06 Identify adequate reliable information and resources for personal, family, and work-related problem solving.

2.00.02.07 Create solutions to problems using technical means

2.00.02.08 Compare and contrast the advantages and disadvantages of several solutions to a problem.

2.00.02.09 Evaluate outcomes of a decision.

2.00.02.10 Apply decision-making techniques in the workplace

2.00.02.11 Apply technical problem solving abilities and creative talents to situations in the workplace

*2.00.03.00 Assume a leadership role as a responsible family member and citizen

- 2.00.03.01 Evaluate leadership styles appropriate for the workplace and/or home
- 2.00.03.02 Identify ways to be a responsible citizen at home, at school, at work, and in community settings
- 2.00.03.03 Develop effective communication skills.
- 2.00.03.04 Determine ways to motivate others
- 2.00.03.05 Demonstrate initiative to facilitate cooperation

*2.00.04.00 Build and maintain constructive interpersonal relationships

- 2.00.04.01 Assess and be sensitive to others' feelings and point of view
- 2.00.04.02 Examine how individuals from various backgrounds contribute to work and personal situations
- 2.00.04.03 Identify ways to work cooperatively with others of diverse background
- 2.00.04.04 Analyze strategies to manage conflict
- 2.00.04.05 Cooperate and compromise through teamwork and group participation
- 2.00.04.06 Develop communication patterns that enhance family relationships
- 2.00.04.07 Identify characteristics of love and commitment with family, friends, and others
- 2.00.04.08 Understand ways to build and maintain strong, functional families
- 2.00.04.09 Understand ways to build positive parent-child relationships
- 2.00.04.10 Enhance personal development of self and others throughout the lifespan
- 2.00.04.12 Develop a life-management plan

*2.00.05.00 Develop skills to successfully cope with changes taking place in society.

- 2.00.05.01 Analyze the effects of change
- 2.00.05.02 Identify strategies for dealing with family change and stress

2.00.05.03 Identify family and work support resources and services

2.00.05.04 Evaluate the need for continuing education and training

2.00.05.05 Implement strategies to manage the effects of stress

*2.00.06.00 Identify management strategies for balancing work and family roles and responsibilities

2.00.06.01 Analyze the effects of work on family

2.00.06.02 Analyze the effects of family on work

2.00.06.03 Describe personal and family roles and issues

2.00.06.04 Identify present and future family structures and responsibilities

2.00.06.05 Analyze concerns of working parent(s)

2.00.06.06 Evaluate importance of responsible parenting for individuals, families, and society

2.0.0.06.07 Coordinate personal and career responsibilities for well-being of self and others

*2.00.07.00 Develop strategies for lifelong career planning

2.00.07.01 Assess knowledge, attitudes, skills, and aspirations

2.00.07.02 Develop an awareness of careers and skills in a technological society.

2.00.07.03 Complete and process job application forms

2.00.07.04 Design a resume

2.00.07.05 Demonstrate interviewing skills

2.00.07.06 Compare and evaluate job opportunities

2.00.07.07 Analyze organizational structures of the workplace

2.00.07.08 Assess factors influencing wages, annual incomes, and job opportunities

2.00.07.09 Identify strategies for keeping a job, advancing in a job, and increasing wages

2.00.07.10 Evaluate factors involved when assuming a new position within or outside an occupation/ organization

2.00.07.11 Identify strategies for dealing with career successes, changes, and/or disappointments

2.00.07.12 State the approximate number of years a person can expect to work after leaving high school.

2.00.07.13 Compare the advantages and disadvantages of multiple incomes

2.00.07.14 Analyze opportunities for personal and career growth

2.00.07.15 Evaluate career choices in relation to life-management plan

2.00.07.16 Formulate plan to achieve career goals

*2.00.08.00 Develop habits and attitudes that reflect an appropriate work ethic.

2.00.08.01 Analyze the value of work ethic in relation to personal and family values and goals

2.00.08.02 Evaluate the relationship of self-esteem to work ethic

2.00.08.03 Follow directions.

2.00.08.04 Identify strategies to improve workplace policies and attitudes that support individuals and families.

2.00.08.05 Develop a positive attitude

2.00.08.06 Develop time management skills.

*2.00.09.00 Establish a plan for using resources to meet individual and family needs and goals

2.00.09.01 Analyze consumer rights and responsibilities

2.00.09.02 Make informed consumer choices for the well-being of self and others

2.00.09.03 Discuss the role of competitiveness in a global society.

2.00.09.04 Make decisions related to selecting, obtaining, and maintaining clothing for self and family

2.00.09.05 Evaluate financial institutions and services (e.g., savings, investments, credit).

2.00.09.06 Plan strategies to facilitate self-responsibility in managing a financial plan

*2.00.10.00 Evaluate entrepreneurship as a career option

2.00.10.01 Evaluate the role of small business in the economy

2.00.10.02 Analyze opportunities for new business.

2.00.10.03 Examine considerations of starting a business

2.00.10.04 Analyze responsibilities involved in managing a business .

2.00.10.05 Examine factors involved in obtaining financing.

2.00.10.06 Examine importance of effective record keeping.

2.00.10.07 Examine factors involved in selecting a business location.

2.00.10.08 Analyze importance of a customer service policy.

2.00.10.09 Analyze how laws affect small business operations.

2.00.10.10 Examine components of a marketing plan.

2.00.10.11 Analyze importance of a business plan.

*2.00.11.00 Make choices that promote wellness and good health for self and others

2.00.11.01 Describe the significance of a healthy lifestyle

2.00.11.02 Analyze interrelationship between food choices and wellness

2.00.11.03 Identify strategies to promote optimal nutrition and wellness of individuals and families

2.00.11.04 Prepare and serve nutritious foods

2.00.11.05 Demonstrate proper use of equipment

2.00.11.06 Maintain safe work and home environment

2.00.11.07 Identify substance use, abuse, and its effects on individuals, families, work and society.

2.00.11.08 Enhance self-esteem of self and others

2.00.11.09 Distinguish between responsible and irresponsible ways to express emotional and physical intimacy

2.00.11.10 Examine the role of the arts in cultural expression and identity.

2.00.11.11 Explore the significance of a variety of art forms.

MATHEMATICS LITERACY

Algebra

*3.01.01.00 Solve linear equations.

3.01.01.01 Combine like terms.

3.01.01.02 Use the Distributive Property to remove grouping symbols and the Addition/Subtraction Property to combine like terms to simplify expressions.

3.01.01.03 Solve equation in one variable utilizing one operation.

3.01.01.04 Solve equations in one variable utilizing two or more operations.

3.01.01.05 Describe and use the logic of equivalence in working with equations, inequalities, and functions.

3.01.01.06 Identify variables, constants, terms, e expressions, and coefficients.

3.01.01.07 Define absolute value.

3.01.01.08 Evaluate algebraic expressions.

3.01.01.09 Solve the literal equation or formula for a specified variable.

3.01.01.10 Recognize the properties of equalities.

3.01.01.11 Solve a 2x2 system of linear equations by elimination.

3.01.01.12 Solve a 2x2 system of linear equations by substitution.

3.01.01.13 Apply the rules for solving linear equations in one variable.

3.01.01.14 Use formulas.

3.01.01.15 Use handheld graphic calculators to solve linear equations and graph simple functions.

3.01.01.16 Solve linear equations in one variable containing an absolute value symbol.

*3.01.02.00 Use properties of exponents.

3.01.02.01 Define exponent.

3.01.02.02 Compare and compute using scientific notation.

3.01.02.03 Determine values for the square root of any natural number.

3.01.02.04 Determine the principal square root and recognize square roots of negatives as being non-real.

3.01.02.05 Divide terms having factors with exponents.

3.01.02.06 Multiply and divide polynomial expressions.

3.01.02.07 Operate with radicals and leave the result in simplified form.

3.01.02.08 Apply the properties of exponents to simplify polynomial expressions.

3.01.02.09 Multiply terms having factors with exponents.

3.01.02.10 Solve radical equations.

*3.01.03.00 Factor a polynomial of two or more terms.

3.01.03.01 Apply the distributive law in removing common factors.

3.01.03.02 Factor difference of two squares.

3.01.03.03 Factor quadratic trinomials.

3.01.03.04 Factor the sum and differences of perfect cubes.

*3.01.04.00 Solve linear inequalities and show the solution on a number line.

3.01.04.01 Combine like terms.

3.01.04.02 Use the Substitution Property to evaluate expressions and formulas.

3.01.04.03 Evaluate algebraic expressions.

3.01.04.04 Use the Distributive Property to remove grouping symbols and the Addition/Subtraction Property to combine like terms to simplify expressions.

3.01.04.05 Identify variables, constants, terms, expressions, and coefficients.

3.01.04.06 Solve equations in one variable utilizing two or more operations.

3.01.04.07 Describe and use the logic of equivalence in working with equations, inequalities, and functions.

3.01.04.08 Solve a linear inequality in one variable using two or more operations.

3.01.04.09 Define absolute value.

3.01.04.10 Solve problems involving statements of inequality.

*3.01.05.00 Recognize, relate, and use the equivalent ideas of zeros of a function, roots of an equation, and solution of an equation in terms of graphical and symbolic representations.

3.01.05.01 Apply the distributive law in removing common factors.

3.01.05.02 Factor the difference of two squares.

3.01.05.03 Factor quadratic trinomials.

3.01.05.04 Combine like terms.

3.01.05.05 Use the Distributive Property to remove grouping symbols and the Addition/Subtraction Property to combine like terms to simplify expressions.

3.01.05.06 Solve equation in one variable utilizing one operation.

3.01.05.07 Solve equations in one variable utilizing two or more operations.

3.01.05.08 Describe and use the logic of equivalence in working with equations, inequalities, and functions.

3.01.05.09 Identify variables, constants, terms, expressions, and coefficients.

3.01.05.10 Explore and describe characterizing features of functions.

3.01.05.11 Find X and Y intercepts of a line.

3.01.05.12 Decide whether or not a relation is a function. Use function notation. Find domains and ranges.

*3.01.06.00 Graph equations.

3.01.06.01 Develop graphical techniques of solution for problem situations involving functions

3.01.06.02 Explore and describe characterizing features of functions.

3.01.06.03 Describe problem situations by using and relating numerical, symbolic, and graphical representations

3.01.06.04 Use the language and notation of functions in symbolic and graphing settings.

3.01.06.05 Find X and Y intercepts of a line.

3.01.06.06 Write equations for a line.

3.01.06.07 Use a graphing calculator or computer to generate the graph of EL function.

3.01.06.08 Graph a linear equation using the slope-intercept method.

3.01.06.09 Translate among tables, algebraic expressions, and graphs of functions

3.01.06.10 Estimate shape of graphs of various functions and algebraic expressions.

3.01.06.11 Use handheld graphic calculators to solve linear equations and graph simple functions.

3.01.06.12 Graph basic functions using Cartesian coordinate system.

*3.01.07.00 Demonstrate the ability to translate statements and equations from written to algebraic form and algebraic to written form.

*3.01.08.00 Determine slope midpoint, and distance.

3.01.08.01 Solve problems related to sets of points on a Cartesian coordinate system.

*3.01.09.00 Model real-world phenomena with polynomial and exponential functions.

3.01.09.01 Use curve fitting to predict from data.

Geometry

(Note: It is appropriate to teach geometry to Tech Prep students with some theorems and proofs, but for maximum student engagement and success, the major focus should be on the more practical aspects of geometry, such as calculating volumes, surfaces, etc.)

*3.02.01.00 Find perimeters, surface areas and volumes of geometric figures.

3.02.01.01 Recognize and classify two- and three-dimensional figures (e.g., circles, triangles, rectangles, cylinders, prism).

3.02.01.02 Create and interpret drawings of three-dimensional objects.

3.02.01.03 Classify, label, and describe polygons and solids.

3.02.01.04 Represent problem situations with geometric models and apply properties of figures.

3.02.01.05 Use handheld graphic calculators to solve area and volume problems.

3.02.01.06 Given the linear dimensions of various geometric shapes common to the techno-- logical industries, determine areas and volumes in English and metric units.

*3.02.02.00 Explore compass and straight edge constructions in the context of geometric theorems.

*3.02.03.00 Recognize, classify, and use properties of lines and angles.

3.02.03.01 Demonstrate an understanding of angles and parallel and perpendicular lines.

3.02.03.02 Define terms related to angles.

3.02.03.03 Make constructions related to angles.

3.02.03.04 Demonstrate an understanding of special angles.

3.02.03.05 Understand the various units of measure of angles.

3.02.03.06 Identify points, lines, and planes.

3.02.03.07 Use the concept of between-ness.

3.02.03.08 Measure angles correctly.

*3.02.04.00 Describe and apply the properties of similar and/or congruent figures.

3.02.04.01 Be able to make scale drawings.

*3.02.05.00 Solve right-triangle problems.

3.02.05.01 Apply the Pythagorean theorem.

3.02.05.02 Identify basic functions of sine, cosine, and tangent

3.02.05.03 Compute and solve problems using basic trig functions.

*3.02.06.00 Demonstrate inductive and deductive reasoning through application to various subject areas.

3.02.06.01 Demonstrate an understanding of and ability to use proof.

Numbers and Number Relations

*3.03.01.00 Estimate answers, compute, and solve problems involving real numbers.

3.03.01.01 Round off decimals to one or more places

3.03.01.02 Round and/or truncate numbers to designated place value.

3.03.01.03 Round off single and multiple digit whole numbers.

3.03.01.04 Estimate measurements.

3.03.01.05 Use mental computation when computer and calculator are inappropriate.

*3.03.02.00 Compare and contrast the real number system, the rational number system' and the whole number system.

*3.03.03.00 Determine if a solution to a mathematical problem is reasonable (estimate).

*3.03.04.00 Select and compute using appropriate units of measure.

3.03.04.01 Convert, compare, and compute with common units of measurement within and/or across measurement systems.

Data Analysis and Probability

*3.04.01.00 Collect and organize data into tables, charts, and graphs.

3.04.01.01 Take a random sample from a population.

*3.04.02.00 Determine the probability of an event.

3.04.02.01 Determine the probability of more than one event.

3.04.02.02 Use computer simulations and random number generation to estimate probability.

*3.04.03.00 Understand and apply measures of central tendency, variability, and correlation.

3.04.03.01 Compute and interpret means (averages).

3.04.03.02 Compute and interpret median and/or mode.

3.04.03.03 Understand what a normal distribution is.

3.04.03.04 Understand what a uniform distribution is.

Technical Algebra

*3.05.01.00 Evaluate and graph functions using rectangular coordinates.

3.05.01.01 Graph inequalities in two variables.

3.05.01.02 Analyze the effects of parameter changes on graphs.

*3.05.02.00 Solve systems of linear equations and inequalities using matrices, graphs, and algebraic methods.

3.05.02.01 Solve systems of linear equations with up to three variables.

3.05.02.02 Solve a 2x2 system of linear equations using matrices.

3.05.02.03 Describe and solve algebraic situations with matrices.

*3.05.03.00 Understand the complex number system and exhibit facility with its operation.

3.05.03.01 Solve problems having complex solutions.

3.05.03.02 Examine complex numbers as zeros of functions.

3.05.03.03 Graph basic functions using polar coordinate system.

3.05.03.04 Graph using polar coordinates.

3.05.03.05 Contrast and compare algebras of rational, real, and complex numbers with characteristics of a matrix algebra system.

3.05.03.06 Determine factors and roots of a polynomial with complex roots.

3.05.03.07 Graph complex numbers.

3.05.03.08 Add, subtract, multiply and divide complex numbers in rectangular and polar form.

3.05.03.09 Convert complex numbers from rectangular form to the exponential.

*3.05.04.00 Analyze exponential and logarithmic functions.

3.05.04.01 Identify and define inverse functions.

3.05.04.02 Do calculations involving exponential and logarithmic expressions and functions.

3.05.04.03 Use definitions to show the relationship between exponential and logarithmic functions.

3.05.04.04 Graph the logarithmic and exponential functions.

3.05.04.05 Describe and use inverse relationship between functions including exponential and logarithmic.

3.05.04.06 Use graphing calculators to generate tables to plot exponential and logarithmic curves.

3.05.04.07 Use properties of logarithms to solve problems.

3.05.04.08 Use graphing calculators to calculate logarithms in bases other than 10.

3.05.04.09 Solve elementary logarithmic and exponential equations.

*3.05.05.00 Simplify and solve quadratic equations.

3.05.05.01 Simplify algebraic expressions and multiply and divide polynomials along with solving quadratic equations.

3.05.05.02 Solve a quadratic equation by factoring by completing the square, and by using the quadratic formula.

Technical Trigonometry

*3.06.01.00 Solve problems using the trigonometric functions.

3.06.01.01 Know the sign of each circular function in any quadrant.

3.06.01.02 Know the circular functions of the special angles, pi/6, pi/4, pi/3 (30, 60, 90)

3.06.01.03 Define the circular functions on a circle of radius r with the center at the origin.

3.06.01.04 Understand the relationship of the circular functions and the trig functions.

3.06.01.05 Identify and use the trig functions for the sum of angles.

3.06.01.06 Solve right-triangle problems.

3.06.01.07 State the value of the trig functions of an angle using the reference angle.

3.06.01.08 Apply the law of sines to find measures of sides of angles of a triangle.

3.06.01.09 Apply the law of cosines in finding measures of sides and angles of triangles.

3.06.01.10 Convert between radians and degrees.

3.06.01.11 Solve problems with negative rotations.

3.06.01.12 Solve right triangle problems including application problems.

*3.06.02.00 Recognize and identify graphs of the trigonometric functions.

3.06.02.01 Recognize and graph basic trig curves.

3.06.02.02 Explore graphs in three dimensions.

3.06.02.03 Identify and define inverse functions.

3.06.02.04 Solve trigonometric equations and verify trigonometric identities.

3.06.02.05 Use the fundamental trig identities in performing operations.

*3.06.03.00 Demonstrate an understanding in the use of vectors.

3.06.03.01 Apply vectors in problem solutions

3.06.03.02 Deduce properties of figures using vectors.

3.06.03.03 Develop and use vectors to represent distance and magnitude including operations.

3.06.03.04 Explore relationships between complex numbers and vectors.

3.06.03.05 Add and subtract vectors geometrically.

3.06.03.06 Use graphing calculators in the study of vectors.

SCIENCE LITERACY

Chemistry

*4.01.01.00 Explore atomic theory and present findings using various representational formats.

4.01.01.01 Describe a mechanism of bond formation and identify the type of chemical bond formed as ionic, covalent, or metallic.

4.01.01.02 Relate the concept of periodicity to atomic properties and the periodic table of elements.

4.01.01.03 Describe charge and ionic compounds in the context of electrochemical theories.

4.01.01.04 Recognize that the atomic model is only a model and, like any model, is subject to change.

4.01.01.05 State an atomic theory which includes atomic structure, components and their properties, interactions (electron/nuclear) and theory models.

4.01.01.06 Demonstrate knowledge of chemical symbolism which will include symbols, formulas, and equations.

*4.01.02.00 Perform investigations that require observations over varying periods of time concerning the interrelationship of matter and energy.

4.01.02.01 State a scheme of matter which includes elements, compounds, and mixtures.

4.01.02.02 Relate a chemical equation to the concept of chemical change.

4.01.02.03 Classify matter according to properties and composition.

4.01.02.04 Predict the properties of matter based on data provided in pictures, drawings, charts, graphs, tables, mathematical expressions, and scientific literature.

4.01.02.05 Describe the conservation laws and correctly use the standard units for these laws in relation to conservation of mass/energy and conservation of charge.

4.01.02.06 Describe properties of carbon and organic molecules.

4.01.02.07 State the laws of chemical combinations (conservation of mass, definite composition, multiple proportions).

4.01.02.08 List assumptions of the kinetic theory of matter.

4.01.02.09 Understand chemical changes during combustion, and the relationship between these changes and the carbon cycle, and relationship to the greenhouse effect.

4.01.02.10 Manipulate data in problem solving, including: mole problems, concentration problems, gas law problems, atomic/molecular structure problems and equation balancing.

4.01.02.11 Discuss the concept of mole.

4.01.02.12 State the properties of gases and the laws that apply to gases.

4.01.02.13 Identify applications of Avogadro's hypothesis such as Avogadro's number, molar volume, and gram molecular weight/molar mass.

4.01.02.14 Use the kinetic molecular theory to explain states of matter, rates of reaction, and chemical equilibrium.

4.01.02.15 Describe Stoichiometric relationships

Biology/Ecology

*4.02.01.00 Using models and explorations, examine cellar components and their relationships.

4.02.01.01 Describe the cell theory; structure and function.

4.02.01.02 Describe the role of nucleic acids in cell functions and heredity.

4.02.01.03 Describe the events of mitosis and meiosis.

4.02.01.04 State Mendel's laws of heredity.

4.02.01.05 List causes and effects of gene mutations and chromosomal aberrations.

4.02.01.06 Describe current advances in genetic engineering and possible applications in agriculture and medicine.

*4.02.02.00 Recognizing and contrasting biological characteristics, derive a scheme to classify living organisms.

4.02.02.01 List characteristics of living organisms.

4.02.02.02 Classify common organisms by observable characteristics.

4.02.02.03 Describe how living organisms are classified.

4.02.02.04 List characteristics of organisms in each kingdom.

4.02.02.05 Explain the difference between viruses and bacteria.

*4.02.03.00 Formulate an understanding of the relationship about organisms, their physical surroundings and their change processes.

4.02.03.01 Describe the interrelationship of an organism with its environment, including: pollution, populations, community, conservation, habitat, and ecosystem.

4.02.03.02 Define natural selection and list evidence for its existence.

4.02.03.03 Discuss the development of Darwin's theory of evolution.

4.02.03.04 Discuss hypotheses of the origin of life.

4.02.03.05 Identify ways to take responsibility for living in a global environment

4.02.03.06 Explain and present examples of the importance of water to sustain life in terms of available water sources, water quality, and uses and quantification.

4.02.03.07 Explain interrelationship of wastewater collection, treatment, and public health in terms of organic and inorganic pollutant concentrations and pathogenic organisms.

4.02.03.08 Describe how human activities interfere with biological diversity.

*4.02.04.00 Using an understanding of life processes, formulate explanations of the influences and the effects of other organisms on the living condition.

4.02.04.01 Explain the relationship between microorganisms and disease .

4.02.04.02 Describe the following life processes: digestion, transpiration, respiration, circulation, reproduction, locomotion, excretion, sensory, regulation by endocrine glands, metabolism, and photosynthesis

4.02.04.03 Distinguish between myths and realities of the HIV virus and AIDS.

4.02.04.04 Explain the relationship between anatomical structure and function.

4.02.04.05 Identify structures in human physiology

Physics

*4.03.01.00 Analyze changes within a system when inputs, outputs, and interactions are altered to explain the behavior of charges.

4.03.01.01 Describe electrical energy, including the interaction of matter and energy and energy transformation.

4.03.01.02 Describe the properties of magnetic fields, electrical fields, and electrical charges.

4.03.01.03 Identify and describe basic electrical systems components and theories.

*4.03.02.00 Using measuring and mathematical techniques, apply the laws of motion and conservation to real physical systems.

4.03.02.01 Describe energy transfers and transformations of a system utilizing conservation laws.

4.03.02.02 Describe motion in the context of Newton's Law: linear and rotational.

4.03.02.03 Define work and energy and relate these concepts to kinetic energy, potential energy, and conservation of energy.

4.03.02.04 Define temperature and heat in units commonly used for each.

4.03.02.05 Identify the causes and effects of motion.

4.03.02.06 Use vector analysis (mathematical and graphical) to represent and solve force system problems.

*4.03.03.00 Analyze the heat energy changes within a system as related to the laws of thermodynamics.

4.03.03.01 State first and second laws of thermodynamics.

4.03.03.02 Define specific heat capacity and latent heat.

4.03.03.03 Discuss the concept of entropy.

*4.03.04.00 Using the knowledge gained through experimentation of the characteristics of waves, predict how waves will behave as they interact with each other and various materials.

4.03.04.01 Describe sound systems, including the interaction of matter and energy and energy transformation.

4.03.04.02 Identify the general areas of the electromagnet ice spectrum.

4.03.04.03 Describe reflection and refraction as applied to mirrors and optical instruments (lenses).

4.03.04.04 Describe the particle and wave theories of light.

Laboratory Safety Procedures

*4.04.01.00 Identify and be able to manipulate lab apparatus and materials safely.

*4.04.02.00 Demonstrate familiarity with lab safety equipment (e.g., eyewash, fire blanket & extinguisher, shower, etc.).

Scientific Process

*4.05.01.00 Using sound experimental designs, formulate hypotheses and models that account for observable events.

4.05.01.01 Describe the role of observation and experimentation in the development of scientific theories.

4.05.01.02 Describe the importance of the use of models in scientific thought.

4.05.01.03 Recognize that scientific models are only representations of phenomena and may in fact be faulty or deficient.

4.05.01.04 Investigate some of the ethical dilemmas of the scientist.

4.05.01.05 Identify and define a scientific problem.

4.05.01.06 Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solutions of such questions through familiarity with laboratory and field work.

4.05.01.07 Identify problems rooted in science and technology (effects of hazardous materials on health and safety, effects of drugs on health, troubleshooting problems on a machine).

*4.05.02.00 Use sound experimental designs and models to test hypotheses.

4.05.02.01 Distinguish among fact, hypothesis, and opinion; the relevant from the irrelevant; and the model from the observations the model was derived to describe.

4.05.02.02 Check the logical consistency of hypothesis with relevant laws, facts, observations, or experiments.

4.05.02.03 Read scientific materials critically.

4.05.02.04 Gather scientific information through library work.

4.05.02.05 Investigate areas of specialization in science.

4.05.02.06 Apply basic scientific/technical solutions to selected problems.

4.05.02.07 Employ scientific laws and principles in familiar or unfamiliar situations.

4.05.02.08 Make predictions from data using concepts, laws, and theories.

4.05.02.09 Use facts, concepts, laws, and theories to explain phenomena.

4.05.02.10 Predict the effects of changing variables in a given situation.

4.05.02.11 Suggest or recognize a scientific hypothesis.

4.05.02.12 Construct a hypothetical model.

4.05.02.13 Make direct measurements using laboratory apparatus.

4.05.02.14 Design, conduct, and evaluate an experiment.

4.05.02.15 Use sampling techniques.

4.05.02.16 Propose or select validating procedures (both logical and empirical).

4.05.02.17 Analyze experimental designs.

4.05.02.18 Demonstrate concern for issues related to measurement (e.g., reliability and validity).

*4.05.03.00 Using observations derived from experimental data, draw conclusions or make inferences.

4.05.03.01 Interpret data; i.e., comprehend the meaning of data and recognize, formulate, and evaluate conclusions and generalizations on the basis of information known or given.

4.05.03.02 Interpret information presented in pictures, drawings, charts, graphs, mathematical expressions, and scientific literature.

4.05.03.03 Reason quantitatively and symbolically.

4.05.03.04 Interpret observations of experiments and analyze these to determine patterns, state inferences, and/or draw conclusions.

4.05.03.05 Interpret experimental observations using facts, concepts, laws, and theories.

*4.05.04.00 Organize and communicate the results obtained by observation and experimentation.

4.05.04.01 Sequence events according to the order of occurrence.

4.05.04.02 Describe ways scientists communicate their results.

4.05.04.03 Demonstrate the ability to summarize empirical findings clearly and concisely in written form.

SOCIAL/CULTURAL LITERACY

Growth of Social Political, and Economic Institutions

*5.01.01.00 Describe the role of individuals within their political system, process of voter registration, the election process and responsibility and privileges of citizenship and how law protects individuals.

*5.01.02.00 Explain reasons for European settlement in the New World, the development of divergent political ideology and development of a new nation.

*5.01.03.00 Examine important historical documents in context with the American experience including socio-political and ideological influences that shaped their design. (NW Ordinance, Declaration of Independence, Bill of Rights, and Constitution)

- 5.01.03.01 Explain the purpose and contents of the Bill of Rights.
- 5.01.03.02 Demonstrate an understanding of federalism (local, state, national).
- 5.01.03.03 Identify the main function of each branch (legislative, executive, judicial) at different levels.
- 5.01.03.04 Describe the process for making, amending or removing laws.
- 5.01.03.05 Identify representative symbols: flag, national anthem, Pledge of Allegiance, Independence Day, etc.

*5.01.04.00 Describe the political process.

- 5.01.04.01 Understand the role of political parties in a democracy.
- 5.01.04.02 Understand the role of public officials and how policy is carried out.
- 5.01.04.03 Describe strengths and weaknesses of the American System.
- 5.01.04.04 Describe how resources are gathered to support the process and policies.

*5.01.05.00 Compare and contrast political systems.

- 5.01.05.01 Distinguish characteristics and essential features of representative democracy, monarchy, and dictatorships.

5.01.05.02 Identify international governing bodies (e.g., United Nations, League of Nations, World Bank, European Economic Community, Organization of American States, etc.) and their impact.

*5.01.06.00 Compare the culture, customs, and traditions of different ethnic and minority groups in America.

5.01.06.01 Be aware of the diverse social, psychological, political, and economic factors which influence lifestyles.

5.01.06.02 Evaluate methods and procedures applied by individuals, groups and social agencies to overcome social and economic barriers.

5.01.06.03 Determine the role of, and conflict between, American values such as order, freedom, equality and individualism as they operate in the American Political System.

5.01.06.04 Assess the impact of social class and social structure on economic development in specific countries in the First World and in the Third World.

*5.01.07.00 Know that individuals and societies make choices to satisfy wants with limited resources.

5.01.07.01 Develop an understanding of economic systems.

5.01.07.02 Develop an understanding of the structure and functions of the American economy.

5.01.07.03 Recognize the uneven distribution of world resources.

5.01.07.04 Describe the role of technological growth in economic development and the impact of technology on the physical and human environment.

<u>Human Diversity and Historical/Current Issues</u>

*5.02.01.00 Describe the causes and effects of selected wars.

*5.02.02.00 Describe the diversity of populations encompassing the Civil Rights movement, racism, ethnocentrism, and minority group movements.

5.02.02.01 Recognize diversity among significant individuals

5.02.02.02 Recognize diversity among significant organizations

5.02.02.03 Recognize diversity surrounding immigration

5.02.02.04 Recognize diverse ethnic and minority groups

5.02.02.05 Recognize major world religions

5.02.02.06 Describe the relationship between diversity and historical development and contributions

*5.02.03.00 Describe how an individual interacts with the various societal, economic, and political systems.

5.02.03.01 Be aware of the diverse social, psychological, political and economic factors which influence lifestyles.

5.02.03.02 Recognize individuals and societal practices which result in exceptional treatment of people from various backgrounds.

5.02.03.03 Identify and define the basic concepts of community and community development, and the role of individuals within their political systems and opportunities for civic involvement.

5.02.03.04 Describe and discuss contemporary domestic and international political issues and events, and evaluate the way they impact on self and society.

5.02.03.05 Identify and discuss career opportunities.

Analyzing Information

*5.03.01.00 Differentiate between primary and secondary sources of information.

*5.03.02.00 Illustrate that information can be influenced by cultural bias or propaganda.

*5.03.03.00 Analyze and explain social, cultural and political problems and suggest remedies to those problems.

*5.03.04.00 Compare and contrast culture, customs and traditions of ethnic and minority groups.

*5.03.05.00 Analyze social forces that influence family life.

*5.03.06.00 Demonstrate the ability to use information that enables citizens to make informed choices.

*5.03.07.00 Communicate and cooperate with people of different cultural backgrounds.

*5.03.08.00 Collect and analyze information from charts, graphs, maps, and pictures.

*5.03.09.00 Identify and explain how world problems and future trends will impact his or her life.

*5.03.10.00 Describe and discuss world patterns of population, geographic landforms, climate regions, and economic activities.

*5.03.11.00 Identify opportunities for involvement in civic activities.

TECHNOLOGY LITERACY

Impact of Technology

*6.01.01.00 Develop an awareness of the need and function of technology in society.

6.01.01.01 Explore cause and effect linkages between technology and the environment.

6.01.01.02 Explain how technological change can affect all technology.

6.01.01.03 Evaluate the impact of technology on people, the environment, culture, the economy, and community.

6.01.01.04 Explain how business and industry are related to the larger context of technology, industry, and society.

6.01.01.05 Describe the way in which technological systems have affected social changes and patterns in our society.

6.01.01.06 Explore how people use technology to solve problems.

*6.01.02.00 Develop an awareness of the significance of technology in the past, present, and future.

*6.01.03.00 Explain the interrelationships between business, industry, and society.

6.01.03.01 Evaluate the impact of infrastructure deterioration on people, the environment, and the economy.

*6.01.04.00 Analyze the role of ethics in technological decision making.

6.01.04.01 Research the social effects of technology and identify ethical implications that develop.

6.01.04.02 Recognize that all technological endeavors yield positive and negative side effects.

6.01.04.03 Describe the impact of government on the use of technology.

6.01.04.04 Describe copyright laws and issues as they apply to software.

6.01.04.05 Describe security/privacy issues related to the use of computers.

*6.01.05.00 Explain the interrelationship between business, industry, and community.

Technology in the Workplace

*6.02.01.00 Describe the importance of product quality control.

6.02.01.01 Participate in project-oriented quality control exercises.

*6.02.02.00 Describe the importance of the quality control process.

6.02.02.01 Explain how improved quality leads to improved productivity, competitive position, and profitability.

6.02.02.02 Define the principles of team management.

6.02.02.03 Describe the importance of statistical process control.

6.02.02.04 Plan team meetings.

6.02.02.05 Cite examples of companies that have benefitted from quality efforts.

*6.02.03.00 Solve problems utilizing a systems approach.

6.02.03.01 Apply brainstorming as a method for generating ideas.

6.02.03.02 Apply cause and effect analysis.

6.02.03.03 Evaluate results and make modification to improve a solution.

6.02.03.04 Compile and analyze experimental or design data.

6.02.03.05 Seek new knowledge, synthesize this information, and formulate it into a report or use it in solving a defined problem.

6.02.03.06 Use a research and development process common to industry to solve problems (integrating a variety of productivity analysis skills).

6.02.03.07 Learn how to reach a group consensus.

6.02.03.08 Distinguish between open and closed loop systems.

*6.02.04.00 Define productivity and its relationship to management concepts.

6.02.04.01 Develop an action plan that details what, when, and by whom, action will be taken for performance improvement.

6.02.04.02 Demonstrate the ability to apply management and planning tools such as flow charts, check sheets, cause and effect diagrams, control charts, etc.

6.02.04.03 Describe and use the Plan-Do-Check-Act process.

6.02.04.04 Describe input, process, output systems.

*6.02.05.00 Given an industry or a company, identify "customers."

*6.02.06.00 Develop the ability to function as a member of small or large groups.

6.02.06.01 Learn how to reach a group consensus.

6.02.06.02 Participate in at least one decision-making responsibility role of a hypothetical enterprise.

6.02.06.03 Demonstrate effective negotiation skills.

6.02.06.04 Demonstrate effective delegation skills.

6.02.06.05 Describe the purpose of unions.

*6.02.07.00 Describe the free enterprise system.

6.02.07.01 Describe a simplified version of a patent application process to ensure protection of ideas and control of disclosure.

<u>Technological Tools and Techniques</u>

*6.03.01.00 Describe basic computer operations.

*6.03.02.00 Operate computer hardware.

6.03.02.01 Demonstrate keyboarding proficiency.

6.03.02.02 Demonstrate the ability to utilize various peripherals.

6.03.02.03 Access information networks of a variety of types.

6.03.02.04 Identify and describe the function of the major hardware components comprising a personal computer.

*6.03.03.00 Utilize a variety of software.

6.03.03.01 Prepare reports, resumes, or memoranda using a word processing package.

6.03.03.02 Describe what a database is and what it is used for.

6.03.03.03 Demonstrate general knowledge of CAD and CAM technologies.

6.03.03.04 Describe the major types and applications of software.

6.03.03.05 Determine the availability of resources through information networks.

6.03.03.06 Operate desktop publishing systems.

6.03.03.07 Access external computers using a modem.

6.03.03.08 Utilize information management systems.

6.03.03.09 Utilize a spreadsheet package.

6.03.03.10 Apply basic commands to format disks, copy files, create directories, delete files, change default drives, and access software packages for a variety of computer systems.

*6.03.04.00 Use basic technological language accurately across a variety of technologies.

6.03.04.01 Demonstrate familiarity with different types of language forms used in various technologies, i.e., graphic, symbolic, and verbal.

6.03.04.02 Recognize that different technologies use jargon specific to those technologies.

6.03.04.03 Describe the resources necessary for technology resource people: i.e., information, materials, tools/machines, capital, energy, and time.

*6.03.05.00 Visualize and describe two- and three-dimensional space.

6.03.05.01 Demonstrate familiarity with the basic types of engineering drawings.

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6.03.05.02 Illustrate and/or describe 3-D objects from different points of view (front, back, side, etc.)

6.03.05.03 Develop a three-dimensional mental and physical representation of an object from a two-dimensional drawing.

6.03.05.04 Visualize and present product ideas

*6.03.06.00 Utilize two- and three-dimensional drawings.

6.03.06.01 Represent a three-dimensional object in a two-dimensional drawing.

6.03.06.02 Refine and communicate project ideas.

*6.03.07.00 Create a three-dimensional drawing.

*6.03.08.00 Develop responsible attitudes toward safety around technology.

6.03.08.01 Demonstrate the safe and correct handling of hazardous materials and processes.

6.03.08.02 Demonstrate proper use of common hand and power tools.

*6.03.09.00 Use measuring devices.

6.03.09.01 Perform linear measuring procedures.

6.03.09.02 Perform volume measuring procedures.

6.03.09.03 Demonstrate the accurate use of architectural and engineering scales.

6.03.09.04 Perform temperature measuring procedures.

*6.03.10.00 Demonstrate factors affecting the selection and use of material resources.

6.03.10.01 Explore the utilization of tools and materials in engineering applications.

6.03.10.02 Describe the major properties of materials.

6.03.10.03 Safely perform some common secondary materials processing activities (e.g., drilling, milling, turning, and grinding).

*6.03.11.00 Choose appropriate resources.

6.03.11.01 Perform selected tests to determine materials properties and appropriateness for various uses.

*6.03.12.00 Use multimedia equipment.

6.03.12.01 Create multimedia presentations.

*6.03.13.00 Demonstrate an understanding of the roles and importance of electronics in contemporary technology

6.03.13.01 Describe what is meant by electronics technology.

6.03.13.02 List where electronics technology is used.

6.03.13.03 Describe why electronics technology is used.

HEART of OHIO TECH PREP CONSORTIUM

Revised, 1996

Computerized Business Technologies Model

PART III:
Tech Prep Secondary Competencies (Leveled)

A. Eastland Career Center
B. Franklin Heights High School

Eastland Career Center
Technical Competencies
Computerized Business Technology

Competency 10.01.0.1: Demonstrate knowledge of Business Grammar **R-11, R-12**

Competency Builders:

10.01.01.1 Apply spelling and vocabulary rules to business sentences with an 80% accuracy rating.

10.01.01.2 Identify and select use of parts of speech in business sentences with an 80% accuracy rating.

10.01.01.3 Apply punctuation, capitalization, and number rules to business sentences with a 80% accuracy rating.

Competency 10.02.0.1: Demonstrate knowledge of Typing I (Keyboarding) **M-11, R-12**

Competency Builders:

10.02.0.1.1 Type for three (3) minutes at a minimum speed of 40 words per minute with no more than three (3) errors.

10.02.0.1.2 Demonstrate touch typing skills by identifying alphabetic keys on the keyboard and typing alphabetic keys with correct finger movements.

10.02.0.1.3 Identify number keys on the keyboard and type number keys with correct finger movement.

10.02.0.1.4 Identify number keys on the ten-key numeric keypad and type number keys on the keypad with correct finger movement.

10.02.0.1.5. Identify special symbols on the keyboard and type special symbols on the keyboard with correct finger movement.

10.02.0.1.6 Set margins and tabs in WordPerfect 5.1 or equivalent/higher word processing software.

10.02.0.1.7 Use WordPerfect 5.1 or equivalent/higher word processing software to create, save, retrieve and print a document.

Competency 10.03.0.1: Demonstrate knowledge of Basic Business Concepts

Competency Builders:

I-11, M-11

10.03.0.1.1 Describe government activities that can be classified as regulatory and service functions.

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10.03.0.1.2	Explain why taxes may be used to regulate, provide services, or both.
10.03.0.1.3	Analyze how the history of the U. S. economy influences contemporary business.
10.03.0.1.4	Differentiate between macro and micro economics.
10.03.0.1.5	Show how supply and demand determine the equilibrium price.
10.03.0.1.6	Explain what is meant by a service economy.
10.03.0.1.7	Describe how the federal budget deficit affects business.
10.03.0.1.8	Explain the purpose of an information system and how it functions in a firm.
10.03.0.1.9	Describe important ways in which information technologies affect organizations.
10.03.0.1.10	List the major contributions and limitations of computers.
10.03.0.1.11	Distinguish between computer hardware and software.
10.03.0.1.12	Identify the components of a computer system and the functions of each.
10.03.0.1.13	Distinguish among mainframe computers, minicomputers, and microcomputers.
10.03.0.1.14	Explain the role that computers play in business today.
10.03.0.1.15	Summarize global developments and trends in the information systems industry.
10.03.0.1.16	Explain the functions of accounting.
10.03.0.1.17	Explain the importance of accounting functions to the firm's management and to outside parties such as investors, creditors, and government agencies.
10.03.0.1.18	Outline the steps in the accounting process.
10.03.0.1.19	Identify the accounting equation and its components.
10.03.0.1.20	Explain the accounting equation's relationship to the double-entry system.
10.03.0.1.21	Explain the role of budgets in business.
10.03.0.1.22	Explain how a firm uses funds.
10.03.0.1.23	Explain how the financial manager can generate additional revenue from excess funds.
10.03.0.1.24	Describe the characteristics a good form of money should have.
10.03.0.1.25	List the functions of money.
10.03.0.1.26	Distinguish between money (M1) and near-money (M2).

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10.03.0.1.27	Identify the major categories of financial institutions and the sources and uses of their funds.
10.03.0.1.28	Explain the functions of the Federal Reserve System and the tools it uses to increase or decrease the money supply.
10.03.0.1.29	Identify the purpose and primary functions of the Federal Deposit Insurance Corporation (FDIC).
10.03.0.1.30	Explain the major provisions of the Banking Act of 1980 and its impact on financial deregulation.
10.03.0.1.31	Distinguish between credit cards and debit.
10.03.0.1.32	Explain the roles of the electronic funds transfer system (EFTS).
10.03.0.1.33	Explain the trend toward interstate banking and financial supermarkets in the current competition among financial institutions.

I-12, M-12

10.03.0.1.34	Discuss the concept and implications of economic freedom, and list the major components of the capitalistic system.
10.03.0.1.35	Evaluate the interaction and effects of the capitalistic system, the standard of living, and the environment of business.
10.03.0.1.36	Explain the advantages and disadvantages of capitalism as opposed to other world systems.
10.03.0.1.37	Explain why a business organization has obligations to satisfy the needs of customers, owners, employees, management, and governmental agencies.
10.03.0.1.38	Summarize the interdependency of a business organization and federal, state, and local governments.
10.03.0.1.39	Explain what a business organization is and identify the people (groups) associated with a business organization.
10.03.0.1.40	Identify the functions of management and describe the relationship of managerial functions and operative functions.
10.03.0.1.41	Identify organizational objectives.
10.03.0.1.42	List the basic needs of man according to Maslow's theory.
10.03.0.1.43	Explain an organizational chart.
10.03.0.1.44	Recognize and compare the advantages and disadvantages of the forms of business ownership.

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10.03.0.1.45	Explain the dual objectives of a personnel/human resources department and identify the typical functions performed by the personnel/human resources department.
10.03.0.1.46	Explain the workings of labor unions, their goals and structure.
10.03.0.1.47	Define marketing as a process, and describe the marketing organization and its goals and objectives.
10.03.0.1.48	Explain the relationship of form, time, place, and possession utility.
10.03.0.1.49	Define a channel of distribution, and list the major channels of distribution for consumer and industrial goods.
10.03.0.1.50	Distinguish between personal selling, non-personal selling, and sales promotion and identify the advantages and disadvantages of each.
10.03.0.1.51	Define communication channels, and identify and distinguish between the various communications media and their uses.
10.03.0.1.52	Describe the function of advertising in business and discuss the traditional advertising media in terms of audience, costs, and markets reached.
10.03.0.1.53	Explain the life cycle of a product.
10.03.0.1.54	Describe the finance function as a separate business function with primary and secondary goals.
10.03.0.1.55	Identify the sources of funds available to a business, calculate financial ratios, and describe basic financial statements.
10.03.0.1.56	Define the roles of competition and of the entrepreneur in a private enterprise system.
10.03.0.1.57	Discuss the challenges that face American business today.
10.03.0.1.58	Discuss the factors of production and the factors of payment.
10.03.0.1.59	Explain the concepts of gross domestic product and productivity.
10.03.0.1.60	Illustrate how American business can maintain global competitiveness.
10.03.0.1.61	Explain the importance of international business.
10.03.0.1.62	Define the concepts involved in international business and analyze why countries tend to specialize in certain goods.
10.03.0.1.63	Discuss the role of global and multi-national firms.
10.03.0.1.64	Identify the main barriers to global business.
10.03.0.1.65	Explain multi-national economic integration.

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10.03.0.1.66	Describe the United States as a Foreign Market.
10.03.0.1.67	Explain the concepts of social responsibility and business ethics.
10.03.0.1.68	Describe the historical method of evaluating social performance.
10.03.0.1.69	Discuss how a corporation is organized and operated.
10.03.0.1.70	Differentiate among vertical, horizontal, and conglomerate mergers.
10.03.0.1.71	Explain the differences among private ownership, public ownership, and collective ownership (cooperatives).
10.03.0.1.72	Explained the vital role played by entrepreneurs and small business in the global economy.
10.03.0.1.73	Define entrepreneurship.
10.03.0.1.74	Describe how entrepreneurs are different from other business people.
10.03.0.1.75	Define small business.
10.03.0.1.76	Identify the industries in which most small firms are established.
10.03.0.1.77	Compare the advantages and disadvantages of a small business.
10.03.0.1.78	Outline the role of franchising in the U. S. economy.
10.03.0.1.79	Outline the popular methods of small business operation in the global market.
10.03.0.1.80	Explain the skills required for managerial success.
10.03.0.1.81	Distinguish between strategic planning, tactical planning, and operational planning.
10.03.0.1.82	Explain the concept of leadership and identify the three general leadership traits.
10.03.0.1.83	Identify the basic leadership styles.
10.03.0.1.84	List the steps in the decision making process.
10.03.0.1.85	Contrast programmed and non-programmed decisions.
10.03.0.1.86	Explain the steps involved in the organizing process.
10.03.0.1.87	Identify the major forms of departmentalization.
10.03.0.1.88	Explain the relationship between authority, responsibility, and accountability.
10.03.0.1.89	List the determinants of the span of management.
10.03.0.1.90	Describe current trends in organizations and how they affect employees.

10.03.0.1.91	Evaluate each of the four basic forms of organization.
10.03.0.1.92	Explain the function of the informal organization in a firm.
10.03.0.1.93	Describe the role of entrepreneurship in modern organizations.
10.03.0.1.94	Explain the strategic importance of production and operations management to a firm.
10.03.0.1.95	Discuss the use of computers and technology, such as robots, CAD\CAM, FMS, CIM, MRP, MRPII in production.
10.03.0.1.96	Describe the major tasks of production and operations managers.
10.03.0.1.97	Compare the alternative designs for production facilities.
10.03.0.1.98	List the steps involved in the purchasing process.
10.03.0.1.99	Identify the steps in the production control process.
10.03.0.1.100	Explain the importance of total quality management and the methods companies use to maintain quality standards.
10.03.0.1.101	Discuss the environmental impact of the production function and steps companies can take to reduce pollution.
10.03.0.1.102	Trace the development of the human relations movement in the United States.
10.03.0.1.103	Distinguish between Theory X and Theory Y managers.
10.03.0.1.104	Contrast the Theory Z organization with the typical U. S. firm.
10.03.0.1.105	Describe and differentiate between a job's motivational factors and maintenance factors.
10.03.0.1.106	Outline the steps involved in a Management By Objectives (MBO) program.
10.03.0.1.107	Explain the quality-of-work life (QWL) concept.
10.03.0.1.108	Identify the major categories of QWL programs.
10.03.0.1.109	Differentiate between job enrichment and job enlargement.
10.03.0.1.110	Describe the concept of human resource planning.
10.03.0.1.111	Outline the major steps involved in human resource planning.
10.03.0.1.112	Explain how each step in the recruitment and selection process contributes to finding the right person for the job.
10.03.0.1.113	Describe the different methods of training operative employees and present and potential managers.

10.03.0.1.114	Relate performance appraisal to effective human resource management.
10.03.0.1.115	List the different types of employee benefits and the likely changes in future employee benefits.
10.03.0.1.116	Explain the role of OSHA in protecting employee health and safety.
10.03.0.1.117	Identify and explain the major provisions of the major federal laws affecting labor unions.
10.03.0.1.118	Explain how collective bargaining agreements are established.
10.03.0.1.119	Explain the roles played by arbitrators and mediators in the collective bargaining process.
10.03.0.1.120	Outline the sources of power, or "weapons," of labor and management.
10.03.0.1.121	Explain the marketing concept.
10.03.0.1.122	Outline how a marketing strategy is developed.
10.03.0.1.123	Describe the environmental forces that influence marketing decision-making.
10.03.0.1.124	Explain the concept of a market.
10.03.0.1.125	Describe the marketing research function.
10.03.0.1.126	List and explain the basis used to segment markets.
10.03.0.1.127	List the components of product strategy.
10.03.0.1.128	Identify the types of consumer products, industrial products, and services.
10.03.0.1.129	Describe the product mix and product lines.
10.03.0.1.130	List the stages in the new-product development process.
10.03.0.1.131	Outline the different types of pricing objectives.
10.03.0.1.132	Discuss how prices are set in the marketplace.
10.03.0.1.133	Show how break-even analysis can be used in pricing strategy.
10.03.0.1.134	Differentiate between skimming and penetration pricing strategies.
10.03.0.1.135	Explain the value created by the distribution function.
10.03.0.1.136	Identify the major components of a distribution strategy.
10.03.0.1.137	Identify the various types of wholesaling intermediaries.

10.03.0.1.138	Describe how the vertical marketing system (VMS) differs from a traditional distribution channel.
10.03.0.1.139	Outline the primary categories of retailers.
10.03.0.1.140	Explain the role of the physical distribution function.
10.03.0.1.141	List the objectives of promotion.
10.03.0.1.142	Explain the concept of a promotional mix.
10.03.0.1.143	Identify the steps in the sales process.
10.03.0.1.144	Identify the factors that influence the selection of a promotional mix.
10.03.0.1.145	Contrast pushing and pulling promotional strategies.
10.03.0.1.146	Distinguish between primary and secondary markets for securities.
10.03.0.1.147	Compare common stock, preferred stock, and bonds.
10.03.0.1.148	Explain why investors might prefer common stock, preferred stock, or bonds.
10.03.0.1.149	Identify the three basic objectives of investors and the types of securities most likely to accomplish each objective.
10.03.0.1.150	Outline the styles involved in selling or purchasing a security listed on the organized securities exchanges.
10.03.0.1.151	Describe the information included in stock and bond quotations.
10.03.0.1.152	Explain the role of mutual funds in the securities field.
10.03.0.1.153	Evaluate the major features of state and federal laws designed to protect investors.
10.03.0.1.154	Define risk and distinguish between the two types of risk faced by individuals and businesses.
10.03.0.1.155	Explain each of the four methods of dealing with risk
10.03.0.1.156	Analyze the law of large numbers and explain how it makes insurance possible.
10.03.0.1.157	Distinguish between public and private insurance companies.
10.03.0.1.158	Identify types of insurance provided by public insurance companies.
10.03.0.1.159	Identify the types of property and liability insurance and describe their importance to a business.
10.03.0.1.160	Outline the various types of health insurance.

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10.03.0.1.161 Explain each of the types of life insurance a firm might offer its employees.

Competency 10.04.0.1: Demonstrate knowledge of Computer Literacy I for Windows M-11, R-12

Competency Builders:

10.04.0.1.1 Explain what a computer is and how it processes data to produce information.

10.04.0.1.2 Identify the four operations of the information processing cycle: input, process, output, and storage.

10.04.0.1.3 Explain how the operations of the information processing cycle are performed by computer hardware and software.

10.04.0.1.4 Describe the elements of an information system: equipment, software, data, personnel, users, and procedures.

10.04.0.1.5 Explain the responsibilities of information system personnel.

10.04.0.1.6 Explain the use of computers in our world.

10.04.0.1.7 Identify the most widely used general microcomputer software applications and their key processing features.

10.04.0.1.8 Describe how each application can help users.

10.04.0.1.9 Explain integrated software and its advantages.

10.04.0.1.10 List and describe the guidelines for purchasing hardware and software packages.

10.04.0.1.11 List and describe the learning aids and support tools that help users to use microcomputer applications.

10.04.0.1.12 Define the types of inputs and outputs and how the computer uses each type.

10.04.0.1.13 Define data and explain the terms used to describe data: field, record, file, database.

10.04.0.1.14 Describe the standard features of keyboards, and explain how to use the cursor control and function keys.

10.04.0.1.15 Explain the types of terminals and how they are used.

10.04.0.1.16 Explain user interfaces and list the features that a good user interface should have.

10.04.0.1.17 Discuss how data entry differs in interactive and batch processing.

10.04.0.1.18 List and explain the systems and procedures associated with data entry.

10.04.0.1.19	Explain the term ergonomics and describe some of the important features of good equipment design.
10.04.0.1.20	Identify the components of the processor unit and describe their use.
10.04.0.1.21	Define a bit and describe how a series of bits in a byte is used to represent characters.
10.04.0.1.22	Discuss how the ASCII and EBCIDIC codes represent characters.
10.04.0.1.23	Discuss the primary factors that affect the speed of the processor unit.
10.04.0.1.24	Describe the characteristics of RAM and ROM memory, and list several other types of memory.
10.04.0.1.25	List the common types of reports that are used for output.
10.04.0.1.26	Describe multimedia.
10.04.0.1.27	Describe the features and classifications of printers.
10.04.0.1.28	Identify and explain the difference of impact and non-impact printers.
10.04.0.1.29	Describe the types of screens available and list common screen features.
10.04.0.1.30	Define auxiliary storage.
10.04.0.1.31	Describe the forms of auxiliary storage used and how special-purpose storage devices are used.
10.04.0.1.32	Explain how data is stored on diskettes, hard disks and tape.
10.04.0.1.33	Explain how data stored on magnetic disks can be protected.
10.04.0.1.34	Explain what data management is and why it is needed.
10.04.0.1.35	Describe sequential files, indexed files, and direct (or relative) files.
10.04.0.1.36	Explain the difference between sequential and random retrieval of records from a file.
10.04.0.1.37	Describe the data maintenance procedures for updating data including adding, changing, and deleting.
I-12, M-12	
10.04.0.1.38	Discuss the advantages of a database management system (DBMS).
10.04.0.1.39	Define and describe the basic components of a communications system.
10.04.0.1.40	Describe the various transmission media and line configurations used for communication channels.

10.04.0.1.41	Identify and explain the communications equipment used in a communications system.
10.04.0.1.42	Describe the functions performed by communications software including how data is transmitted.
10.04.0.1.43	List the major categories of networks and describe the common network configurations.
10.04.0.1.44	Describe how bridges and gateways are used to connect networks.
M-11, R-12	
10.04.0.1.45	Define the term management information systems and explain how information is important to an organization.
10.04.0.1.46	Discuss the different levels in an organization and how the information requirements differ for each level.
10.04.0.1.47	Define the term information system and identify the elements of an information system.
10.04.0.1.48	Describe the different types of information systems and the trend toward integration.
10.04.0.1.49	Explain how personal computers are used in management information systems.
10.04.0.1.50	Discuss how electronic devices and applications are used in the automated office.
10.04.0.1.51	Describe the technologies that are developing for the automated factory.
10.04.0.1.52	Discuss the trend toward computer-integrated enterprise.
10.04.0.1.53	Discuss the use of personal computers in the home.
10.04.0.1.54	Describe the methods used in computer-aided instruction (CAI).
10.04.0.1.55	Explain the guidelines for purchasing personal computers.
10.04.0.1.56	Discuss the social issues relating to computers.
10.04.0.1.57	Define data and information.
10.04.0.1.58	Describe the use and handling of diskettes and hard disks.
10.04.0.1.59	Discuss computer software and explain the difference between application software and system software.
10.04.0.1.60	Describe what a graphic user interface (GUI) is.
10.04.0.1.61	Identify the elements of a window.
10.04.0.1.62	Perform basic mouse operations.

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10.04.0.1.63 Perform the following window operations; choose a command from a menu; respond to dialogue boxes; name a file; explain what a directory, subdirectory and path are; open, enlarge and scroll a window; and obtain on-line help while using an application.

Competency 10.05.0.1: Demonstrate knowledge of Typing II

Competency Builders:

10.05.0.1.1 Type a letter in modern block style from rough draft copy; edit and change typed copy **M-11, R-12**

10.05.0.1.2 Apply rules of tables and columns to statistical material. **M-12**

10.05.0.1.3 Count lines and spaces for correct table placement. **M-12**

10.05.0.1.4 Assemble data into correct table arrangements and key results; judge data presentation for correct alignment. **M-12**

10.05.0.1.5 Apply rules of office reports to documents demonstrating use of single and double spacing in paragraphing; change margins for left-bound reports. **M-12**

10.05.0.1.6 Type paragraphs for three (3) minute timed writings with three (3) errors or less at fifty (50) words per minute. **M-11, R-12**

Competency 10.06.0.1: Demonstrate knowledge of Editing Business Documents M-11, R-12

Competency Builders:

10.06.0.1.1 Correctly apply rules that deal with abbreviations, plurals and possessives, compound words and word division to different types of written communications.

10.06.0.1.2 Edit, proofread, transcribe, and format different types of written documents.

Competency 10.07.0.1: Demonstrate knowledge of Integrated Computer Applications

Competency Builders:

10.07.0.1.1 Use a complex GUI integrated software package to perform word processing, spreadsheet and database applications. **M-12**

10.07.0.1.2 Use the word processing application of an integrated software package to perform the following functions: rename, copy, and delete a document/file; move within a document using the cursor movement keys; insert, delete, edit, underline, boldface, and center text; work with blocks of text; set tabs and margins; create headers, footers, footnotes, and endnotes; print blocks, pages, and multiple copies; use the search and replace functions; use the spell checker and thesaurus; use the function keys; and return to the integrated software menu. **I-11, M-12**

10.07.0.1.3 Use the spreadsheet application of an integrated software package to perform the following functions: create, save, retrieve, print, and delete a spreadsheet; move the cell pointer within a worksheet; use the Help function; enter labels, values, and formulas; copy, change the format, and move the ranges of cells; create formulas with and without using functions; describe and apply relative and absolute cell references in a formula; apply the manual and automatic methods of recalculation; create and use range names; create and print graphs; modify worksheet appearance (borders, grid lines); modify printed worksheet appearance, landscape, font and size; use date formats, autofill; and add and delete rows and columns. **I-11, M-11**

10.07.0.1.4. Use the database application of an integrated software package to perform the following functions: create, save, retrieve, print, and delete a database; distinguish between a database file, record, and field; use the Help function; create and modify a database structure; enter; view; add, delete, change and update; perform simple and complex searches; sort and index files in ascending and descending order; sort and index files on single and multiple fields; create, modify and print detail and summary reports; create, modify and print reports with totals and subtotals; modify database format and font size; use headers and footers in a list; and insert rows and fields in a report. **I-11, M-12**

10.07.0.1.5 Use the integrated software package to exchange data among the three types of applications. **I-12, M-12**

Competency 10.08.0.1: Demonstrate knowledge of WordPerfect for Windows I M-12

Competency Builders:

10.08.0.1.1 Access and exit WordPerfect for Windows.

10.08.0.1.2 Use the WordPerfect Windows template and pull-down menus.

10.08.0.1.3 Change the default directory.

10.08.0.1.4. Create, edit, save, print, close, and open documents.

10.08.0.1.5 Use Reveal Codes menu item.

10.08.0.1.6 Search and replace text, change the case of text, and move and copy text.

10.08.0.1.7 Create, edit, change the appearance and location of, and select different button bars.

10.08.0.1.8 Use three different ways to select a file, and two different ways to close a file.

10.08.0.1.9 Use the Speller and Thesaurus.

10.08.0.1.10 Change fonts, set margins, tabs, line spacing, text justification, use Hyphenation, and Indent.

10.08.0.1.11 View, use, and remove the ruler, create headers, footers, page numbers, and page breaks.

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10.08.0.1.12 Center, bold, and underline text; use flush right; and create superscripts and subscripts.

10.08.0.1.13 Set printer options and view a document.

10.08.0.1.14 Open more than one document; view more than one window; size a window; and move a window and a dialogue box.

10.08.0.1.15 Create and merge primary and secondary files; merge from the keyboard; and merge a document as a list of items.

Competency 10.09.0.1: Demonstrate knowledge of Advanced LOTUS 1-2-3 M-12

Competency Builders:

10.09.0.1.1 List the three major components of a spreadsheet and explain how they interact in the LOTUS 1-2-3 WINDOWS environment.

10.09.0.1.2 Define and explain the use of LOTUS 1-2-3 WINDOWS MENUS, dialogue boxes, HELP, and Smart ICONS.

10.09.0.1.3. Correctly apply absolute and relative cell adjustment using the MOVE and COPY.

10.09.0.1.4. Correctly apply the use of a complex @IF statement to validate criteria in a spreadsheet.

10.09.0.1.5 Design a viable spreadsheet to be used for creating charts.

10.09.0.1.6 Develop visually desirable charts given specifications for a spreadsheet design.

10.09.0.1.7 Create, maintain, and access a LOTUS database.

10.09.0.1.8 Analyze a database through the use of queries and database functions.

10.09.0.1.9 Create interactive screen displays through the use of macros and icons.

Competency 10.10.0.1: Demonstrate knowledge of Database Systems M-12

Competency Builders:

10.10.0.1.1 List the characteristics and limitations of dBASE III Plus.

10.10.0.1.2 Use the groups of commands contained in assistant menu.

10.10.0.1.3 Generate a report using the dBASE III Plus report generator.

10.10.0.1.4 Sort and index files.

10.10.0.1.5 Generate a report using the dBASE III Plus REPORT FORM command.

10.10.0.1.6	Create edit screens with a variety of edit checks.
10.10.0.1.7	Maintain multiple files using the VIEW and UPDATE commands.

Competency 10.11.0.1: Demonstrate knowledge of Personal Finance **M-12**

Competency Builders:

10.11.0.1.1	List at least three reasons why personal financial planning is important and list three key components of a financial record system.
10.11.0.1.2	Describe at least three problem situations that may arise from failing to keep financial records or improper financial record keeping.
10.11.0.1.3	List the necessary steps in developing a personal or family budget and develop a one month personal budget.
10.11.0.1.4	List the basic banking services.
10.11.0.1.5	List the danger signals of credit over-extension.
10.11.0.1.6	List the various loan sources in the order of increasing cost.
10.11.0.1.7	Describe the various ways to reduce tax liabilities.
10.11.0.1.8	Describe the various savings instruments.
10.11.0.1.9	List ways to be a better consumer.
10.11.0.1.10	Compare the advantages and disadvantages of owning vs. renting.
10.11.0.1.11	List the alternatives of risk management.
10.11.0.1.12	List the principles of insurance.
10.11.0.1.13	Describe the advantages and disadvantages of the various types of life insurance and determine how much life insurance to buy.
10.11.0.1.14	Describe the types of health insurance, home owners insurance and auto insurance.
10.11.0.1.15	List the prerequisites to investing and ways to accumulate investment funds.
10.11.0.1.16	Rank the various types of investments in terms of risk and return.
10.11.0.1.17	List possible investment goals.
10.11.0.1.18	Describe the advantages and disadvantages of stocks, bonds, and mutual funds.
10.11.0.1.19	List types of investment risk and describe methods for measuring rates of return.

10.11.0.1.20 Estimate retirement income and expenses, and determine Social Security benefits.

10.11.0.1.21 Describe various tax-sheltered retirement plans.

10.11.0.1.22 Describe the requirements for vesting.

10.11.0.1.23 Describe the various types of annuities, I.R.A.'s, and Keogh plans.

10.11.0.1.24 List the major provisions of a will and describe probate.

10.11.0.1.25 Describe ways to use trusts to reduce estate taxes.

10.11.0.1.26 Write a personal financial plan.

Competency 10.12.0.1: Demonstrate knowledge of Financial Accounting

Competency Builders:

M-11

10.12.0.1.1 Identify the users of Financial Statements.

10.12.0.1.2 Describe a Balance Sheet and identify the major categories of accounts on a Balance Sheet; and identify the tools of analysis used by investors and other users of a Balance Sheet.

10.12.0.1.3 Recognize commonly used asset, liability, and shareholder's equity accounts.

10.12.0.1.4 Describe the general layout of an Income Statement and describe the tools of analysis as related to an Income Statement and a Balance Sheet.

10.12.0.1.5 Complete the Accounting Cycle by: Recording transactions of a service organization in a general journal; Posting from journal to ledger ("T" account and running balance); preparing a trial balance (using 10-column work sheet); Preparing necessary end of period adjustment; preparing adjusted trial balance and extending it in the work sheet to Income Statement/Balance Sheet; preparing a formal Income Statement; and Preparing a formal Balance Sheet.

10.12.0.1.6 Record entries for maintenance of an imprest petty cash system.

10.12.0.1.7 Prepare a bank reconciliation and the appropriate journal entries.

M-12

10.12.0.1.8 Identify the information supplied by the Statement of Charges in Shareholder's Equity.

10.12.0.1.9 Define the purpose of the Statement of Cash Flows.

10.12.0.1.10 Perform the following Accounting Functions for a merchandising concern: Record sales and purchase transactions; Identify applicable safeguards; Summarize and adjust data at end of period via a work sheet; prepare, in good form, a multiple-step income statement;

analyze an income statement evaluating the adequacy of net income; and compute current ratio and working capital.

10.12.0.1.11 Prepare entries to adjust for bad debt expectation based upon percent of sales or percent of receivables.

10.12.0.1.12 Determine cost of goods sold and ending inventory under FIFO, LIFO, and weighted average inventory valuation methods.

10.12.0.1.13 Compute inventory turnover, explaining why this ratio is of interest to short term creditors.

10.12.0.1.14 Determine the cost of plant assets.

10.12.0.1.15 Distinguish between capital expenditures and revenue expenditures.

10.12.0.1.16 Explain the relationship between depreciation and the matching principle.

10.12.0.1.17 Compute depreciation by the straight-line, units-of-output, declining-balance, and sum-of-the-years'-digits methods.

10.12.0.1.18 Explain why depreciation based upon historical costs may cause an overstatement of profits.

10.12.0.1.19 Record the sale, trade-in, or scrapping of a plant asset.

Competency 10.13.0.1: Demonstrate knowledge of Information Presentation **I-11, M-12**

Competency Builders:

10.13.0.1.1 Explain the use of presentation graphics as a tool to influence and support business decisions.

10.13.0.1.2 List and explain the fundamental elements and terminology used in graphing.

10.13.0.1.3 Select the appropriate chart format for an effective presentation given a set of data.

10.13.0.1.4 Demonstrate proficiency in the use of presentation graphics software.

10.13.0.1.5 Develop and present a final project that incorporates all aspects of information presentation graphics.

Competency 10.14.0.1: Demonstrate knowledge of PC Operating Systems **I-11, M-12, M-11, R-12**

Competency Builders:

10.14.0.1.1 Define hardware and software, and explain the components of the systems unit and the difference between ROM and RAM.

10.14.0.1.2	Differentiate between temporary and permanent memory.
10.14.0.1.3	Explain the different types of disk drives, display adapter cards, printers, the parts of the keyboard, the function of adapter cards, and the use of tape backup, mouse and modem devices.
10.14.0.1.4	Boot the microcomputer, change the default drive, and print the current screen from DOS.
10.14.0.1.5	Perform the following DOS functions: use DATE to change the system date, use TIME to change the system time, use VER to check the version of DOS loaded in RAM, use CLS command to clear the screen, and use PROMPT command to create a custom prompt.
10.14.0.1.6	Define track, sector, cluster, directory, and File Allocation Table (FAT)
10.14.0.1.7	Perform the following DOS formatting disk functions, use FORMAT to prepare a new disk for use, use the FORMAT/V option to put a volume label on a disk, use the FORMAT/s option to create a system disk, use FORMAT options to format double-density disks in high-density drives, use VOL to check the volume label, use LABEL to add, change, or delete a volume label, and use PATH to set an extended search path for DOS.
10.14.0.1.8	Explain and create DOS "filenames" and "extensions."
10.14.0.1.9	Perform the following DOS filename and directory functions: use DIR to list a directory, use CTRL-s or PAUSE to pause the screen, use DIR/P to pause a directory, use DIR/W to display a wide directory listing, use wildcards to display a selective directory listing, use input and output redirection, and use the filter commands of MORE, SORT, and FIND.
10.14.0.1.10	Perform the following DOS file manipulation functions: use COPY to make copies of existing files, use XCOPY to make a selective copy of a diskette, use DISKCOPY to make a copy of a diskette, use REN to rename files, use DEL to erase files, use ATTRIB to give a file read-only status, and use CHKDSK to display disk and RAM status reports.
10.14.0.1.11	Explain the purpose of a DOS subdirectory system.
10.14.0.1.12	Perform the following DOS subdirectory functions: use the MD command to create subdirectories, use the CD command to change the current subdirectory, use the RD command to erase a subdirectory, use the COPY command to copy files to subdirectories, use the XCOPY command to copy a subdirectory system, and use the TREE command to display the subdirectory system.
10.14.0.1.13	Explain the purpose of DOS Batch files and an AUTOEXEC.BAT file.
10.14.0.1.14	Perform the following DOS Batch file functions: use the COPY CON: command to create an ASCII file, execute an AUTOEXEC.BAT file, use EDLIN to create and edit ASCII file, and use the TYPE command to display an ASCII file.
10.14.0.1.15	Perform the following DOS commands: CLS, PRINT, UNDELETE, TYPE, RESTORE, BACKUP, HELP, DOSSHELL.
10.14.0.1.16	Explain the function and components of a Windows microcomputer system.

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10.14.0.1.17	Explain the purpose, advantages, equipment necessary for Microsoft Windows (3.1 or higher).
10.14.0.1.18	Perform the following Windows functions: start and exit Windows, use the mouse to select menus, commands, and icons, start and exit an application, control the size and placement of a window, and obtain help on any subject in Windows.
10.14.0.1.19	Perform the following Windows program management functions: switch among different application windows, organize application windows and application icons, exit applications safely, use and recognize group windows and program icons, customize Program Manager by adding program icons and group windows, copy and move program icons, organize program icons and group windows, and delete program icons and group windows.
10.14.0.1.20	Perform the following Windows file management functions: view directories and files on a disk; change the way file information is displayed; prepare and maintain disks for storing files; locate, select, rename, move, copy, and delete directories and files; start an application from File Manager; and view and print text files.
10.14.0.1.21	Perform the following Windows word-processing functions using the Write option: create and navigate within a document, save and retrieve a document, edit document, print a document, format a document.
10.14.0.1.22	Perform the following Windows graphics functions using the Paintbrush option: use a variety of graphic tools to create a drawing, save and retrieve a drawing, print a drawing, develop a drawing in an effective and systematic manner.
10.14.0.1.23	Perform the following Windows transfer of data between applications functions: transfer images from Paintbrush to Write using Clipboard; move and size a graphic image inside a Write document, save and open Clipboard files, capture windows and screens using Clipboard, and edit the captured images using Paintbrush.
10.14.0.1.24	Explain the function and components of a microcomputer system.
10.14.0.1.25	Explain the purpose of Microsoft Windows 3.10.14.0.1., and the benefits to the user.
10.14.0.1.26	Explain what is needed to work with Windows 3.10.14.0.1.
10.14.0.1.27	Start and exit Windows.
10.14.0.1.28	Use the mouse to select Windows menus, commands, and icons.
10.14.0.1.29	Start and exit a Windows application.
10.14.0.1.30	Control the size and placement of a window.
10.14.0.1.31	Obtain help on any subject in Windows.
10.14.0.1.32	Switch among different application windows.
10.14.0.1.33	Organize application windows and application icons.

10.14.0.1.34	Exit Windows applications safely.
10.14.0.1.35	Use and recognize group windows and program icons.
10.14.0.1.36	Customize Program Manager by adding program icons and group windows.
10.14.0.1.37	Copy and move Windows program icons.
10.14.0.1.38	Organize Windows program icons and group windows.
10.14.0.1.39	Delete Windows program icons and group windows.
10.14.0.1.40	Use Windows to view the files and directories on a disk.
10.14.0.1.41	Change the way Windows file information is displayed.
10.14.0.1.42	Using Windows prepare and maintain disks for storing files.
10.14.0.1.43	Using Windows name, locate, select, rename, move, copy, and delete directories and files.
10.14.0.1.44	Start an application from File Manager.
10.14.0.1.45	Using File Manager view and print text files.
10.14.0.1.46	Using Windows create and navigate within a document.
10.14.0.1.47	Using Windows save and retrieve a document.
10.14.0.1.48	Using Windows edit, format, and print a document.
10.14.0.1.49	Create a drawing using a variety of Paintbrush graphic tools.
10.14.0.1.50	Using Paintbrush save, retrieve, and print a drawing.
10.14.0.1.51	Using Paintbrush develop a drawing in an effective and systematic manner.
10.14.0.1.52	Transfer images from Paintbrush to Write using Clipboard.
10.14.0.1.53	Move and size a graphic image inside a Write document.
10.14.0.1.54	Save and open Clipboard files.
10.14.0.1.55	Capture windows and screens using Clipboard.
10.14.0.1.56	Edit the captured images using Paintbrush.
10.14.0.1.57	Enter alphabetic and numeric data at 8,000 or more keystrokes per hour with at least 99% accuracy.

Eastland Career Center
Computerized Business Technology
Math 3/Junior Year

3.01.01.04	Solve linear equations in one variable analytically.
	Solve linear equations in one variable graphically, with error of at most .01
3.01.01.16	Solve absolute value equations graphically, with error of at most .01
3.01.01.17	Solve absolute value equations analytically.
3.01.01.18	Solve absolute value inequalities analytically.
3.01.01.19	Solve absolute value inequalities graphically, with error of at most .01
3.01.04.00	Solve linear inequalities in one variable analytically.
	Solve linear inequalities in one variable graphically, with error of at most .01
3.01.05.00	Explain the relationship between factors and zeros.
	Solve polynomial equations using the zero-factor property.
3.01.05.01	Factor by grouping.
3.01.05.02	Factor the difference of two squares.
3.01.05.03	Factor trinomials.
3.01.05.12	Define a function.
3.01.05.13	Recognize if a relation is a function when it is given in equation form.
3.01.05.14	Recognize if a relation is a function when it is in tabular form.
3.01.06.02	Analyze data to determine whether or not a linear model is appropriate.
3.01.06.04	Evaluate functions using function notation.
3.01.06.05	Find intercepts of a linear function.
3.01.06.06	Write the equation of a linear function given 2 points and the slope.
3.01.06.07	Change the standard form of a linear function to its slope - intercept form.
3.01.06.08	Find the slope of a linear function.
3.01.06.09	Draw a graph of a linear function without using a graphing calculator.

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3.01.06.10	Draw a graph of a linear function given its slope and one point or two points.
	Translate an English statement, tabular data into a linear mathematical model.
3.01.06.11	Find a complete graph of a linear function using the graphing calculator. (All intercepts should show clearly and graph should fill the viewing window).
3.01.06.13	Write the equation of a linear function given one point on the line and an equation of a line that is either parallel or perpendicular to that function.
3.05.02.00	Solve systems of linear equations using the elimination method.
	Solve systems of linear equations using the substitution method.
	Solve systems of linear equations using a graphical approach.
	Solve a system of linear equations that applies to a given problem situation.
3.05.03.08	Add, subtract, multiply, and divide complex non-real numbers.
	Simplify to a+b< from when I is raised to any whole number power.
	Simplify radical expressions when a negative number is in the radicand.
3.05.03.10	Determine complex number solutions of quadratic equations.

Eastland Career Center
Computerized Business Technology
Math 4/Senior Year

Algebra	**M-12**
3.01.01.15	Use handheld graphic calculators to solve equations and graph functions.

Numbers and Number Relations	**M-12**
3.03.01.00	Estimate answers, compute, and solve problems involving real numbers.
3.03.01.01	Round off decimals to one or more places.
3.03.01.02	Round and/or truncate numbers to designated place value.
3.03.01.03	Round off single and multiple digit whole numbers.
3.03.01.04	Estimate measurements.
3.03.01.05	Use mental computation when computer and calculator are inappropriate.
3.03.02.00	Compare and contrast the real number system, the rational number system, and the whole number system.
3.03.03.00	Determine if a solution to a mathematical problem is reasonable (estimate).
3.03.04.00	Select and compute using appropriate units of measure.
3.03.04.01	Convert, compare, and compute with common units of measurement within and/or across measurement systems.
3.03.04.02	Understand the difference between accuracy and precision.
3.03.04.03	Perform integer arithmetic and perform operations with numbers in the normalized form.
3.03.05.00	Understand basic concepts and will use set notations.
3.03.05.01	Draw a Venn diagram for any set expression.
3.03.05.02	Form unions, intersections, and complements.
3.03.05.03	Draw simple flowcharts for set expressions and Venn diagrams.
3.03.05.04	Determine the best possible flowchart from the given information.

Data Analysis and Probability	M-12
3.04.01.00	Collect and organize data into tables, charts, and graphs.
3.04.01.01	Take a random sample from a population.
3.04.02.00	Determine the probability of an event.
3.04.02.01	Determine the probability of more than one event.
3.04.02.02	Use computer simulations and random number generation to estimate probability.
3.04.03.00	Understand and apply measures of central tendency, variability, and correlation.
3.04.03.01	Compute and interpret means (averages).
3.04.03.02	Compute and interpret median and/or mode.
3.04.03.03	Understand what a normal distribution is.
3.04.03.04	Understand what a uniform distribution is.

Technical Algebra	M-12
3.05.03.02	Examine complex numbers as zeros of functions.
3.05.03.03	Graph basic functions using polar coordinate systems.
3.05.03.04	Graph using polar coordinates.
3.05.03.05	Contrast and compare algebras of rational, real, and complex numbers with characteristics of a matrix algebra system.
3.05.03.06	Determine factors and roots of a polynomial with complex roots.
3.05.03.07	Graph complex numbers.
3.05.03.08	Add, subtract, multiply, and divide complex numbers in rectangular and polar form.
3.05.03.09	Convert complex numbers from rectangular form to the exponential.
3.05.04.00	Analyze exponential and logarithmic functions.
3.05.04.01	Identify and define inverse functions.
3.05.04.02	Do calculations involving exponential and logarithmic expressions and functions.
3.05.04.03	Use definitions to show the relationship between exponential and logarithmic expressions

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and functions.

3.05.04.04	Graph the logarithmic and exponential functions.
3.05.04.05	Describe and use inverse relationship between functions including exponential and logarithmic.
3.05.04.06	Use graphing calculators to generate tables to plot exponential and logarithmic curves.
3.05.04.07	Use properties of logarithms to solve problems.
3.05.04.08	Use graphing calculators to calculate logarithms in bases other than 10.
3.05.04.09	Solve elementary logarithmic and exponential equations.

Technical Trigonometry **M-12**

Included only if required for entrance exams, ACT, SAT, etc. Not needed in business.

3.06.01.00	Solve problems using the trigonometric functions.
3.06.01.01	Know the sign of each circular function in any quadrant.
3.06.01.02	Know the circular functions of the special angles, pi/6/ pi/4, pi/3 (30,60, 90).
3.06.01.03	Define the circulary functions on a circle of radius r with the center at the origin.
3.06.01.04	Understand the relationship of the circular functions and the trig functions.
3.06.01.05	Identify and use the trig functions for the sum of angles.
3.06.01.06	Solve right-triangle problems.
3.06.01.07	State the value of the trig functions of an angle using the reference angle.
3.06.01.08	Apply the law of sines to find measures of sides of angles of a triangle.
3.06.01.09	Apply the law of cosines in finding measures of sides and angles of triangles.
3.06.01.10	Convert between radians and degrees.
3.06.01.11	Solve problems with negative rotations.
3.06.01.12	Solve right triangle problems including application problems.
3.06.02.00	Recognize and identify graphs of the trigonometric functions.
3.06.02.01	Recognize and graph basic trig curves.

3.06.02.02	Explore graphs in three dimensions.
3.06.02.03	Identify and define inverse functions.
3.06.02.04	Solve trigonometric equations and verify trigonometric identities.
3.06.02.05	Use the fundamental trig identities in performing operations.
3.06.03.00	Demonstrate an understanding in the use of vectors.
3.06.03.01	Apply vectors in problem solutions.
3.06.03.02	Deduce properties of figures using vectors.
3.06.03.03	Develop and use vectors to represent distance and magnitude including operations.
3.06.03.04	Explore relationships between complex numbers and vectors.
3.06.03.05	Add and subtract vectors geometrically.
3.06.03.06	Use graphing calculators in the study of vectors.
3.07.01.00	Convert numbers between base ten, base two, base eight, and base sixteen.
3.07.01.01	Perform addition, subtraction, and multiplication in base two, base eight, and base sixteen.
3.07.01.02	Express a number in its complement form and perform complementary arithmetic.
3.07.02.00	List steps to solve a program or complete a task.
3.07.02.01	Convert the steps into a flowchart.
3.07.02.02	Write the steps in pseudocode language.
3.07.02.03	Construct with tables for logic statements containing AND, OR, EOR, and the negation.
3.07.02.04	Draw flowcharts as an aid to simplifying and helping the understanding of the logic expressions.
3.07.02.05	Construct truth tables for conditionals and biconditionals and for the converse, inverse, and contrapositive of a given statement.
3.07.02.06	Construct truth tables and determine when a statement is a tautology or a contradiction, or neither.
3.07.02.07	Identify the logical expression, the relation operator, and the dependent statement in various computer-language conditional statements.
3.07.02.08	Draw a circuit from a given Boolean expression and vice versa.

3.07.02.09	Learn Boolean properties and use them to simplify expressions.
3.07.02.10	Tie together the relationships from set theory, symbolic logic, and Boolean Algebra.
3.07.02.11	Learn the Boolean properties and use them to simplify expressions.

COMPUTERIZED BUSINESS TECHNOLOGY

Franklin Heights High School
Leveled Competencies
for
Central Ohio Tech Prep Consortium

FEBRUARY, 1996

FRANKLIN HEIGHTS HIGH SCHOOL
Computer Business Technology
Tech Prep Lab Competencies

Competency 10.01.0.1: Demonstrate knowledge of Business Grammar

Competency Builders:

I- 9, R-10, R-11, M-12

10.01.0.1.1 Apply spelling and vocabulary rules to business sentences with an 80% accuracy rating.

10.01.0.1.2 Identify and select use of parts of speech in business sentences with an 80% accuracy rating.

10.01.0.1.3 Apply punctuation, capitalization, and number rules to business sentences with a 80% accuracy rating.

Competency 10.02.0.1: Demonstrate knowledge of Keyboarding

Competency Builders:

I,-9, R-10, M-11, R-12

10.02.0.1.1 Type for three (3) minutes at a minimum speed of 40 words per minute with no more than three (3) errors.

10.02.0.1.2 Demonstrate touch typing skills by identifying alphabetic keys on the keyboard and typing alphabetic keys with correct finger movements.

10.02.0.1.3 Identify number keys on the keyboard and type number keys with correct finger movement.

10.02.0.1.4 Identify number keys on the ten-key numeric keypad and type number keys on the keypad with correct finger movement.

10.02.0.1.5. Identify special symbols on the keyboard and type special symbols on the keyboard with correct finger movement.

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M-11, R-12

10.02.0.1.6 Set margins and tabs in WordPerfect 5.1 or equivalent/higher word processing software.

10.02.0.1.7 Use WordPerfect 5.1 or equivalent/higher word processing software to create, save, retrieve and print a document.

Competency 10.03.0.1: Demonstrate knowledge of Basic Business Concepts

Competency Builders:

M-11, R-12

10.03.0.1.1 Describe government activities that can be classified as regulatory and service functions.

10.03.0.1.2 Explain why taxes may be used to regulate, provide services, or both.

I-10, R-11, M-12

10.03.0.1.3 Analyze how the history of the U. S. economy influences contemporary business.

10.03.0.1.4 Differentiate between macro and micro economics.

10.03.0.1.5 Show how supply and demand determine the equilibrium price.

10.03.0.1.6 Explain what is meant by a service economy.

10.03.0.1.7 Describe how the federal budget deficit affects business.

M-11

10.03.0.1.8 Explain the purpose of an information system and how it functions in a firm.

10.03.0.1.9 Describe important ways in which information technologies affect organizations.

10.03.0 1.10 List the major contributions and limitations of computers.

I-10, M-11, R-12

10.03.0.1.10 Distinguish between computer hardware and software.

10.03.0.1.12 Identify the components of a computer system and the functions of each.

10.03.0.1.13 Distinguish among mainframe computers, minicomputers, and microcomputers.

10.03.0.1.14 Explain the role that computers play in business today.

10.03.0.1.15 Summarize global developments and trends in the information systems industry.

I-11, R-11, M-12

10.03.0.1.16 Explain the functions of accounting.

10.03.0.1.17 Explain the importance of accounting functions to the firm's management and to outside parties such as investors, creditors, and government agencies.

10.03.0.1.18 Outline the steps in the accounting process.

10.03.0.1.19 Identify the accounting equation and its components.

10.03.0.1.20 Explain the accounting equation's relationship to the double-entry system.

10.03.0.1.21 Explain the role of budgets in business.

10.03.0.1.22 Explain how a firm uses funds.

10.03.0.1.23 Explain how the financial manager can generate additional revenue from excess funds.

10.03.0.1.24 Describe the characteristics a good form of money should have.

10.03.0.1.25 List the functions of money.

10.03.0.1.26 Distinguish between money (M1) and near-money (M2).

10.03.0.1.27 Identify the major categories of financial institutions and the sources and uses of their funds.

10.03.0.1.28 Explain the functions of the Federal Reserve System and the tools it uses to increase or decrease the money supply.

10.03.0.1.29 Identify the purpose and primary functions of the Federal Deposit Insurance Corporation (FDIC).

10.03.0.1.30 Explain the major provisions of the Banking Act of 1980 and its impact on financial deregulation.

10.03.0.1.31 Distinguish between credit cards and debit.

10.03.0.1.32 Explain the roles of the electronic funds transfer system (EFTS).

10.03.0.1.33 Explain the trend toward interstate banking and financial supermarkets in the current competition among financial institutions.

M-12

10.03.0.1.34 Discuss the concept and implications of economic freedom, and list the major components of the capitalistic system.

10.03.0.1.35 Evaluate the interaction and effects of the capitalistic system, the standard of living, and the environment of business.

10.03.0.1.36 Explain the advantages and disadvantages of capitalism as opposed to other world systems.

10.03.0.1.37 Explain why a business organization has obligations to satisfy the needs of customers, owners, employees, management, and governmental agencies.

10.03.0.1.38 Summarize the interdependency of a business organization and federal, state, and local governments.

10.03.0.1.39 Explain what a business organization is and identify the people (groups) associated with a business organization.

10.03.0.1.40 Identify the functions of management and describe the relationship of managerial functions and operative functions.

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10.03.0.1.41 Identify organizational objectives.

M-11, R-12

10.03.0.1.42 List the basic needs of man according to Maslow's theory.

10.03.0.1.43 Explain an organizational chart.

10.03.0.1.44 Recognize and compare the advantages and disadvantages of the forms of business ownership.

10.03.0.1.45 Explain the dual objectives of a personnel/human resources department and identify the typical functions performed by the personnel/human resources department.

M-12

10.03.0.1.46 Explain the workings of labor unions, their goals and structure.

M-10

10.03.0.1.47 Define marketing as a process, and describe the marketing organization and its goals and objectives.

10.03.0.1.48 Explain the relationship of form, time, place, and possession utility.

10.03.0.1.49 Define a channel of distribution, and list the major channels of distribution for consumer and industrial goods.

10.03.0.1.50 Distinguish between personal selling, non-personal selling, and sales promotion and identify the advantages and disadvantages of each.

10.03.0.1.51 Define communication channels, and identify and distinguish between the various communications media and their uses.

10.03.0.1.52 Describe the function of advertising in business and discuss the traditional advertising media in terms of audience, costs, and markets reached.

10.03.0.1.53 Explain the life cycle of a product.

M-11, R-12

10.03.0.1.54 Describe the finance function as a separate business function with primary and secondary goals.

10.03.0.1.55 Identify the sources of funds available to a business, calculate financial ratios, and describe basic financial statements.

10.03.0.1.56 Define the roles of competition and of the entrepreneur in a private enterprise system.

10.03.0.1.57 Discuss the challenges that face American business today.

10.03.0.1.58 Discuss the factors of production and the factors of payment.

10.03.0.1.59 Explain the concepts of gross domestic product and productivity.

10.03.0.1.60 Illustrate how American business can maintain global competitiveness.

10.03.0.1.61 Explain the importance of international business.

10.03.0.1.62 Define the concepts involved in international business and analyze why countries tend to specialize in certain goods.

M-12

10.03.0.1.63 Discuss the role of global and multi-national firms.

10.03.0.1.64 Identify the main barriers to global business.

10.03.0.1.65 Explain multi-national economic integration.

10.03.0.1.66 Describe the United States as a Foreign Market.

10.03.0.1.67 Explain the concepts of social responsibility and business ethics.

10.03.0.1.68 Describe the historical method of evaluating social performance.

M-11

10.03.0.1.69 Discuss how a corporation is organized and operated.

10.03.0.1.70 Differentiate among vertical, horizontal, and conglomerate mergers.

10.03.0.1.71 Explain the differences among private ownership, public ownership, and collective ownership (cooperatives).

10.03.0.1.72 Explained the vital role played by entrepreneurs and small business in the global economy.

10.03.0.1.73 Define entrepreneurship.

10.03.0.1.74 Describe how entrepreneurs are different from other business people.

10.03.0.1.75 Define small business.

10.03.0.1.76 Identify the industries in which most small firms are established.

10.03.0.1.77 Compare the advantages and disadvantages of a small business.

10.03.0.1.78 Outline the role of franchising in the U. S. economy.

10.03.0.1.79 Outline the popular methods of small business operation in the global market.

I-11, M-12

10.03.0.1.80 Explain the skills required for managerial success.

10.03.0.1.81 Distinguish between strategic planning, tactical planning, and operational planning.

10.03.0.1.82 Explain the concept of leadership and identify the three general leadership traits.

10.03.0.1.83 Identify the basic leadership styles.

10.03.0.1.84 List the steps in the decision making process.

10.03.0.1.85 Contrast programmed and non-programmed decisions.

10.03.0.1.86 Explain the steps involved in the organizing process.

10.03.0.1.87 Identify the major forms of departmentalization.

M-11

10.03.0.1.88 Explain the relationship between authority, responsibility, and accountability.

10.03.0.1.89 List the determinants of the span of management.

10.03.0.1.90 Describe current trends in organizations and how they affect employees.

10.03.0.1.91 Evaluate each of the four basic forms of organization.

10.03.0.1.92 Explain the function of the informal organization in a firm.

10.03.0.1.93 Describe the role of entrepreneurship in modern organizations.

M-12

10.03.0.1.94 Explain the strategic importance of production and operations management to a firm.

10.03.0.1.95 Discuss the use of computers and technology, such as robots, CAD\CAM, FMS, CIM, MRP, MRPII in production.

10.03.0.1.96 Describe the major tasks of production and operations managers.

10.03.0.1.97 Compare the alternative designs for production facilities.

10.03.0.1.98 List the steps involved in the purchasing process.

10.03.0.1.99 Identify the steps in the production control process.

M-12

10.03.0.1.100 Explain the importance of total quality management and the methods companies use to maintain quality standards.

10.03.0.1.101 Discuss the environmental impact of the production function and steps companies can take to reduce pollution.

10.03.0.1.102 Trace the development of the human relations movement in the United States.

10.03.0.1.103 Distinguish between Theory X and Theory Y managers.

10.03.0.1.104 Contrast the Theory Z organization with the typical U. S. firm.

10.03.0.1.105 Describe and differentiate between a job's motivational factors and maintenance factors.

10.03.0.1.106 Outline the steps involved in a Management By Objectives (MBO) program.

10.03.0.1.107 Explain the quality-of-work life (QWL) concept.

10.03.0.1.108 Identify the major categories of QWL programs.

10.03.0.1.109 Differentiate between job enrichment and job enlargement.

10.03.0.1.110 Describe the concept of human resource planning.

10.03.0.1.111 Outline the major steps involved in human resource planning.

10.03.0.1.112 Explain how each step in the recruitment and selection process contributes to finding the right person for the job.

10.03.0.1.113 Describe the different methods of training operative employees and present and potential managers.

10.03.0.1.114 Relate performance appraisal to effective human resource management.

10.03.0.1.115 List the different types of employee benefits and the likely changes in future employee benefits.

10.03.0.1.116 Explain the role of OSHA in protecting employee health and safety.

10.03.0.1.117 Identify and explain the major provisions of the major federal laws affecting labor unions.

10.03.0.1.118 Explain how collective bargaining agreements are established.

10.03.0.1.119 Explain the roles played by arbitrators and mediators in the collective bargaining process.

10.03.0.1.120 Outline the sources of power, or "weapons," of labor and management.

10.03.0.1.121 Explain the marketing concept.

10.03.0.1.122 Outline how a marketing strategy is developed.

10.03.0.1.123 Describe the environmental forces that influence marketing decision-making.

10.03.0.1.124 Explain the concept of a market.

10.03.0.1.125 Describe the marketing research function.

10.03.0.1.126 List and explain the basis used to segment markets.

10.03.0.1.127 List the components of product strategy.

10.03.0.1.128 Identify the types of consumer products, industrial products, and services.

10.03.0.1.129 Describe the product mix and product lines.

10.03.0.1.130 List the stages in the new-product development process.

10.03.0.1.131 Outline the different types of pricing objectives.

10.03.0.1.132 Discuss how prices are set in the marketplace.

10.03.0.1.133 Show how break-even analysis can be used in pricing strategy.

10.03.0.1.134 Differentiate between skimming and penetration pricing strategies.

10.03.0.1.135 Explain the value created by the distribution function.

10.03.0.1.136 Identify the major components of a distribution strategy.

10.03.0.1.137 Identify the various types of wholesaling intermediaries.

10.03.0.1.138 Describe how the vertical marketing system (VMS) differs from a traditional distribution channel.

M-11

10.03.0.1.139 Outline the primary categories of retailers.

10.03.0.1.140 Explain the role of the physical distribution function.

10.03.0.1.141 List the objectives of promotion.

10.03.0.1.142 Explain the concept of a promotional mix.

10.03.0.1.143 Identify the steps in the sales process.

10.03.0.1.144 Identify the factors that influence the selection of a promotional mix.

10.03.0.1.145 Contrast pushing and pulling promotional strategies.

M-12

10.03.0.1.146 Distinguish between primary and secondary markets for securities.

10.03.0.1.147 Compare common stock, preferred stock, and bonds.

10.03.0.1.148 Explain why investors might prefer common stock, preferred stock, or bonds.

10.03.0.1.149 Identify the three basic objectives of investors and the types of securities most likely to accomplish each objective.

10.03.0.1.150 Outline the styles involved in selling or purchasing a security listed on the organized securities exchanges.

10.03.0.1.151 Describe the information included in stock and bond quotations.

10.03.0.1.152 Explain the role of mutual funds in the securities field.

10.03.0.1.153 Evaluate the major features of state and federal laws designed to protect investors.

I-11, M-12

10.03.0.1.154 Define risk and distinguish between the two types of risk faced by individuals and businesses.

10.03.0.1.155 Explain each of the four methods of dealing with risk

10.03.0.1.156 Analyze the law of large numbers and explain how it makes insurance possible.

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10.03.0.1.157 Distinguish between public and private insurance companies.

10.03.0.1.158 Identify types of insurance provided by public insurance companies.

10.03.0.1.159 Identify the types of property and liability insurance and describe their importance to a business.

10.03.0.1.160 Outline the various types of health insurance.

10.03.0.1.161 Explain each of the types of life insurance a firm might offer its employees.

Competency 10.04.0.1: Demonstrate knowledge of Computer Literacy I for Windows

Competency Builders:

I-9, R-10, M-11

10.04.0.1.1 Explain what a computer is and how it processes data to produce information.

10.04.0.1.2 Identify the four operations of the information processing cycle: input, process, output, and storage.

10.04.0.1.3 Explain how the operations of the information processing cycle are performed by computer hardware and software.

10.04.0.1.4 Describe the elements of an information system: equipment, software, data, personnel, users, and procedures.

10.04.0.1.5 Explain the responsibilities of information system personnel.

10.04.0.1.6 Explain the use of computers in our world.

10.04.0.1.7 Identify the most widely used general microcomputer software applications and their key processing features.

10.04.0.1.8 Describe how each application can help users.

10.04.0.1.9 Explain integrated software and its advantages.

10.04.0.1.10 List and describe the guidelines for purchasing hardware and software packages.

10.04.0.1.11 List and describe the learning aids and support tools that help users to use microcomputer applications.

10.04.0.1.12 Define the types of inputs and outputs and how the computer uses each type.

10.04.0.1.13 Define data and explain the terms used to describe data: field, record, file, database.

10.04.0.1.14 Describe the standard features of keyboards, and explain how to use the cursor control and function keys.

10.04.0.1.15 Explain the types of terminals and how they are used.

I-10, M-11

10.04.0.1.16 Explain user interfaces and list the features that a good user interface should have.

10.04.0.1.17 Discuss how data entry differs in interactive and batch processing.

10.04.0.1.18 List and explain the systems and procedures associated with data entry.

10.04.0.1.19 Explain the term ergonomics and describe some of the important features of good equipment design.

M-11

10.04.0.1.20 Identify the components of the processor unit and describe their use.

10.04.0.1.21 Define a bit and describe how a series of bits in a byte is used to represent characters.

10.04.0.1.22 Discuss how the ASCII and EBCIDIC codes represent characters.

10.04.0.1.23 Discuss the primary factors that affect the speed of the processor unit.

10.04.0.1.24 Describe the characteristics of RAM and ROM memory, and list several other types of memory.

I-9, M-10, R-11

10.04.0.1.25 List the common types of reports that are used for output.

10.04.0.1.26 Describe multimedia.

10.04.0.1.27 Describe the features and classifications of printers.

10.04.0.1.28 Identify and explain the difference of impact and non-impact printers.

10.04.0.1.29 Describe the types of screens available and list common screen features.

10.04.0.1.30 Define auxiliary storage.

10.04.0.1.31 Describe the forms of auxiliary storage used and how special-purpose storage devices are used.

10.04.0.1.32 Explain how data is stored on diskettes, hard disks and tape.

10.04.0.1.33 Explain how data stored on magnetic disks can be protected.

10.04.0.1.34 Explain what data management is and why it is needed.

10.04.0.1.35 Describe sequential files, indexed files, and direct (or relative) files.

10.04.0.1.36 Explain the difference between sequential and random retrieval of records from a file.

10.04.0.1.37 Describe the data maintenance procedures for updating data including adding, changing, and deleting.

10.04.0.1.38 Discuss the advantages of a database management system (DBMS).

10.04.0.1.39 Define and describe the basic components of a communications system.

I-11, M-12

10.04.0.1.40 Describe the various transmission media and line configurations used for communication channels.

10.04.0.1.41 Identify and explain the communications equipment used in a communications system.

10.04.0.1.42 Describe the functions performed by communications software including how data is transmitted.

10.04.0.1.43 List the major categories of networks and describe the common network configurations.

10.04.0.1.44 Describe how bridges and gateways are used to connect networks.

10.04.0.1.45 Define the term management information systems and explain how information is important to an organization.

10.04.0.1.46 Discuss the different levels in an organization and how the information requirements differ for each level.

10.04.0.1.47 Define the term information system and identify the elements of an information system.

10.04.0.1.48 Describe the different types of information systems and the trend toward integration.

10.04.0.1.49 Explain how personal computers are used in management information systems.

10.04.0.1.50 Discuss how electronic devices and applications are used in the automated office.

10.04.0.1.51 Describe the technologies that are developing for the automated factory.

10.04.0.1.52 Discuss the trend toward computer-integrated enterprise.

10.04.0.1.53 Discuss the use of personal computers in the home.

10.04.0.1.54 Describe the methods used in computer-aided instruction (CAI).

I-9, M-10

10.04.0.1.55 Explain the guidelines for purchasing personal computers.

10.04.0.1.56 Discuss the social issues relating to computers.

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10.04.0.1.57 Define data and information.

10.04.0.1.58 Describe the use and handling of diskettes and hard disks.

10.04 0.1.59 Discuss computer software and explain the difference between application software and system software.

10.04.0.1.60 Describe what a graphic user interface (GUI) is.

10.04.0.1.61 Identify the elements of a window.

10.04.0.1.62 Perform basic mouse operations.

10.04.0.1.63 Perform the following window operations; choose a command from a menu; respond to dialogue boxes; name a file; explain what a directory, subdirectory and path are; open, enlarge and scroll a window; and obtain on-line help while using an application.

Competency 10.05.0.1: Demonstrate knowledge of Typing II

Competency Builders:

I-9, M-10

10.05.0.1.1 Type a letter in modern block style from rough draft copy; edit and change typed copy.

10.05.0.1.2 Apply rules of tables and columns to statistical material.

10.05.0.1.3 Count lines and spaces for correct table placement.

10.05.0.1.4 Assemble data into correct table arrangements and key results; judge data presentation for correct alignment.

10.05.0.1.5 Apply rules of office reports to documents demonstrating use of single and double spacing in paragraphing; change margins for left-bound reports.

M-11

10.05.0.1.6 Type paragraphs for three (3) minute timed writings with three (3) errors or less at fifty (50) words per minute.

Competency 10.06.0.1: Demonstrate knowledge of Editing Business Documents

Competency Builders:

I-9, M-10

10.06.0.1.1 Correctly apply rules that deal with abbreviations, plurals and possessives, compound words and word division to different types of written communications.

10.06.0.1.2 Edit, proofread, transcribe, and format different types of written documents.

Competency 10.07.0.1: Demonstrate knowledge of Integrated Computer Applications

Competency Builders:

I-9, R-10, M-11, R-12

10.07.0.1.1 Use a complex GUI integrated software package to perform word processing, spreadsheet and database applications.

10.07.0.1.2 Use the word processing application of an integrated software package to perform the following functions: rename, copy, and delete a document/file; move within a document using the cursor movement keys; insert, delete, edit, underline, boldface, and center text; work with blocks of text; set tabs and margins; create headers, footers, footnotes, and endnotes; print blocks, pages, and multiple copies; use the search and replace functions; use the spell checker and thesaurus; use the function keys; and return to the integrated software menu.

10.07.0.1.3 Use the spreadsheet application of an integrated software package to perform the following functions: create, save, retrieve, print, and delete a spreadsheet; move the cell pointer within a worksheet; use the Help function; enter labels, values, and formulas; copy, change the format, and move the ranges of cells; create formulas with and without using functions; describe and apply relative and absolute cell references in a formula; apply the manual and automatic methods of recalculation; create and use range names; create and print graphs; modify worksheet appearance (borders, grid lines); modify printed worksheet appearance, landscape, font and size; use date formats, autofill; and add and delete rows and columns.

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10.07.0.1.4. Use the database application of an integrated software package to perform the following functions: create, save, retrieve, print, and delete a database; distinguish between a database file, record, and field; use the Help function; create and modify a database structure; enter; view; add, delete, change and update; perform simple and complex searches; sort and index files in ascending and descending order; sort and index files on single and multiple fields; create, modify and print detail and summary reports; create, modify and print reports with totals and subtotals; modify database format and font size; use headers and footers in a list; and insert rows and fields in a report.

10.07.0.1.5 Use the integrated software package to exchange data among the three types of applications..

Competency 10.08.0.1: Demonstrate knowledge of WordPerfect for Windows I

Competency Builders:

I-10, M-11

10.08.0.1.1 Access and exit WordPerfect for Windows.

10.08.0.1.2 Use the WordPerfect Windows template and pull-down menus.

10.08.0.1.3 Change the default directory.

10.08.0.1.4. Create, edit, save, print, close, and open documents.

10.08.0.1.5 Use Reveal Codes menu item.

10.08.0.1.6 Search and replace text, change the case of text, and move and copy text.

10.08.0.1.7 Create, edit, change the appearance and location of, and select different button bars.

10.08.0.1.8 Use three different ways to select a file, and two different ways to close a file.

10.08.0.1.9 Use the Speller and Thesaurus.

10.08.0.1.10 Change fonts, set margins, tabs, line spacing, text justification, use Hyphenation, and Indent.

10.08.0.1.11 View, use, and remove the ruler, create headers, footers, page numbers, and page breaks.

10.08.0.1.12 Center, bold, and underline text; use flush right; and create superscripts and subscripts.

10.08.0.1.13 Set printer options and view a document.

10.08.0.1.14 Open more than one document; view more than one window; size a window; and move a window and a dialogue box.

10.08.0.1.15 Create and merge primary and secondary files; merge from the keyboard; and merge a document as a list of items.

Competency 10.09.0.1: Demonstrate knowledge of Advanced LOTUS 1-2-3

Competency Builders:

I-11, M-12

10.09.0.1.1 List the three major components of a spreadsheet and explain how they interact in the LOTUS 1-2-3 WINDOWS environment.

10.09.0.1.2 Define and explain the use of LOTUS 1-2-3 WINDOWS MENUS, dialogue boxes, HELP, and Smart ICONS.

10.09.0.1.3. Correctly apply absolute and relative cell adjustment using the MOVE and COPY.

10.09.0.1.4. Correctly apply the use of a complex @IF statement to validate criteria in a spreadsheet.

10.09.0.1.5 Design a viable spreadsheet to be used for creating charts.

10.09.0.1.6 Develop visually desirable charts given specifications for a spreadsheet design.

10.09.0.1.7 Create, maintain, and access a LOTUS database.

10.09.0.1.8 Analyze a database through the use of queries and database functions.

10.09.0.1.9 Create interactive screen displays through the use of macros and icons.

Competency 10.10.0.1: Demonstrate knowledge of Database Systems

Competency Builders:

I-10, M-11, R-12

10.10.0.1.1 List the characteristics and limitations of dBASE III Plus.

10.10.0.1.2 Use the groups of commands contained in assistant menu.

10.10.0.1.3 Generate a report using the dBASE III Plus report generator.

10.10.0.1.4. Sort and index files.

10.10.0.1.5 Generate a report using the dBASE III Plus REPORT FORM command.

10.10.0.1.6 Create edit screens with a variety of edit checks.

10.10.0.1.7 Maintain multiple files using the VIEW and UPDATE commands.

Competency 10.11.0.1: Demonstrate knowledge of Personal Finance

Competency Builders:

I-9, R-10, M-11

10.11.0.1.1 List at least three reasons why personal financial planning is important and list three key components of a financial record system.

10.11.0.1.2 Describe at least three problem situations that may arise from failing to keep financial records or improper financial record keeping.

10.11.0.1.3 List the necessary steps in developing a personal or family budget and develop a one month personal budget.

10.11.0.1.4 List the basic banking services.

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M-11

10.11.0.1.5 List the danger signals of credit over-extension.

10.11.0.1.6 List the various loan sources in the order of increasing cost.

10.11.0.1.7 Describe the various ways to reduce tax liabilities.

10.11.0.1.8 Describe the various savings instruments.

10.11.0.1.9 List ways to be a better consumer.

M-12

10.11.0.1.10 Compare the advantages and disadvantages of owning vs. renting.

10.11.0.1.11 List the alternatives of risk management.

10.11.0.1.12 List the principles of insurance.

10.11.0.1.13 Describe the advantages and disadvantages of the various types of life insurance and determine how much life insurance to buy.

10.11.0.1.14 Describe the types of health insurance, home owners insurance and auto insurance.

10.11.0.1.15 List the prerequisites to investing and ways to accumulate investment funds.

10.11.0.1.16 Rank the various types of investments in terms of risk and return.

10.11.0.1.17 List possible investment goals.

10.11.0.1.18 Describe the advantages and disadvantages of stocks, bonds, and mutual funds.

10.11.0.1.19 List types of investment risk and describe methods for measuring rates of return.

10.11.0.1.20 Estimate retirement income and expenses, and determine Social Security benefits.

10.11.0.1.21 Describe various tax-sheltered retirement plans.

10.11.0.1.22 Describe the requirements for vesting.

10.11.0.1.23 Describe the various types of annuities, I.R.A.'s, and Keogh plans.

10.11.0.1.24 List the major provisions of a will and describe probate.

10.11.0.1.25 Describe ways to use trusts to reduce estate taxes.

10.11.0.1.26 Write a personal financial plan.

Competency 10.12.0.1: Demonstrate knowledge of Financial Accounting

Competency Builders:

M-11

10.12.0.1.1 Identify the users of Financial Statements.

10.12.0.1.2 Describe a Balance Sheet and identify the major categories of accounts on a Balance Sheet; and identify the tools of analysis used by investors and other users of a Balance Sheet.

10.12.0.1.3 Recognize commonly used asset, liability, and shareholder's equity accounts.

10.12.0.1.4 Describe the general layout of an Income Statement and describe the tools of analysis as related to an Income Statement and a Balance Sheet.

10.12.0.1.5 Complete the Accounting Cycle by: Recording transactions of a service organization in a general journal; Posting from journal to ledger ("T" account and running balance); preparing a trial balance (using 10-column work sheet); Preparing necessary end of period adjustment; preparing adjusted trial balance and extending it in the work sheet to Income Statement/Balance Sheet; preparing a formal Income Statement; and Preparing a formal Balance Sheet.

10.12.0.1.6 Record entries for maintenance of an imprest petty cash system.

10.12.0.1.7 Prepare a bank reconciliation and the appropriate journal entries.

This section deleted from High School competencies and returned to CSCC 10/95 BT

M-12

10.12.0.1.8	Identify the information supplied by the Statement of Charges in Shareholder's Equity.
10.12.0.1.9	Define the purpose of the Statement of Cash Flows.
10.12.0.1.10	Perform the following Accounting Functions for a merchandising concern: Record sales and purchase transactions; Identify applicable safeguards; Summarize and adjust data at end of period via a work sheet; prepare, in good form, a multiple-step income statement; analyze an income statement evaluating the adequacy of net income; and compute current ratio and working capital.
10.12.0.1.11	Prepare entries to adjust for bad debt expectation based upon percent of sales or percent of receivables.
10.12.0.1.12	Determine cost of goods sold and ending inventory under FIFO, LIFO, and weighted average inventory valuation methods.
10.12.0.1.13	Compute inventory turnover, explaining why this ratio is of interest to short term creditors.
10.12.0.1.14	Determine the cost of plant assets.
10.12.0.1.15	Distinguish between capital expenditures and revenue expenditures.
10.12.0.1.16	Explain the relationship between depreciation and the matching principle.
10.12.0.1.17	Compute depreciation by the straight-line, units-of-output, declining-balance, and sum-of-the-years'-digits methods.
10.12.0.1.18	Explain why depreciation based upon historical costs may cause an overstatement of profits.
10.12.0.1.19	Record the sale, trade-in, or scrapping of a plant asset.

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Competency 10.13.0.1: Demonstrate knowledge of Information Presentation

Competency Builders:

I-10, R-11, M-12

10.13.0.1.1 Explain the use of presentation graphics as a tool to influence and support business decisions.

10.13.0.1.2 List and explain the fundamental elements and terminology used in graphing.

10.13.0.1.3. Select the appropriate chart format for an effective presentation given a set of data.

10.13.0.1.4 Demonstrate proficiency in the use of presentation graphics software.

10.13.0.1.5 Develop and present a final project that incorporates all aspects of information presentation graphics.

Competency 10.14.0.1: Demonstrate knowledge of PC Operating Systems

Competency Builders:

I-10, M-11

10.14.0.1.1 Define hardware and software, and explain the components of the systems unit and the difference between ROM and RAM.

10.14.0.1.2 Differentiate between temporary and permanent memory.

10.14.0.1.3 Explain the different types of disk drives, display adapter cards, printers, the parts of the keyboard, the function of adapter cards, and the use of tape backup, mouse and modem devices.

10.14.0.1.4 Boot the microcomputer, change the default drive, and print the current screen from DOS.

10.14.0.1.5 Perform the following DOS functions: use DATE to change the system date, use TIME to change the system time, use VER to check the version of DOS loaded in RAM, use CLS command to clear the screen, and use PROMPT command to create a custom prompt.

M-12

10.14.0.1.6 Define track, sector, cluster, directory, and File Allocation Table (FAT)

M-11

10.14.0.1.7 Perform the following DOS formatting disk functions, use FORMAT to prepare a new disk for use, use the FORMAT/V option to put a volume label on a disk, use the FORMAT/s option to create a system disk, use FORMAT options to format double-density disks in high-density drives, use VOL to check the volume label, use LABEL to add, change, or delete a volume label, and use PATH to set an extended search path for DOS.

10.14.0.1.8 Explain and create DOS "filenames" and "extensions."

10.14.0.1.9 Perform the following DOS filename and directory functions: use DIR to list a directory, use CTRL-s or PAUSE to pause the screen, use DIR/P to pause a directory, use DIR/W to display a wide directory listing, use wildcards to display a selective directory listing, use input and output redirection, and use the filter commands of MORE, SORT, and FIND.

10.14.0.1.10 Perform the following DOS file manipulation functions: use COPY to make copies of existing files, use XCOPY to make a selective copy of a diskette, use DISKCOPY to make a copy of a diskette, use REN to rename files, use DEL to erase files, use ATTRIB to give a file read-only status, and use CHKDSK to display disk and RAM status reports.

10.14.0.1.11 Explain the purpose of a DOS subdirectory system.

M-12

10.14.0.1.12 Perform the following DOS subdirectory functions: use the MD command to create subdirectories, use the CD command to change the current subdirectory, use the RD command to erase a subdirectory, use the COPY command to copy files to subdirectories, use the XCOPY command to copy a subdirectory system, and use the TREE command to display the subdirectory system.

10.14.0.1.13 Explain the purpose of DOS Batch files and an AUTOEXEC.BAT file.

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M-11

10.14.0.1.14 Perform the following DOS Batch file functions: use the COPY CON: command to create an ASCII file, execute an AUTOEXEC.BAT file, use EDLIN to create and edit ASCII file, and use the TYPE command to display an ASCII file.

10.14.0.1.15 Perform the following DOS commands: CLS, PRINT, UNDELETE, TYPE, RESTORE, BACKUP, HELP, DOSSHELL.

M-10

10.14.0.1.16 Explain the function and components of a Windows microcomputer system.

10.14.0.1.17 Explain the purpose, advantages, equipment necessary for Microsoft Windows (3.1 or higher).

10.14.0.1.18 Perform the following Windows functions: start and exit Windows, use the mouse to select menus, commands, and icons, start and exit an application, control the size and placement of a window, and obtain help on any subject in Windows.

10.14.0.1.19 Perform the following Windows program management functions: switch among different application windows, organize application windows and application icons, exit applications safely, use and recognize group windows and program icons, customize Program Manager by adding program icons and group windows, copy and move program icons, organize program icons and group windows, and delete program icons and group windows.

10.14.0.1.20 Perform the following Windows file management functions: view directories and files on a disk; change the way file information is displayed; prepare and maintain disks for storing files; locate, select, rename, move, copy, and delete directories and files; start an application from File Manager; and view and print text files.

10.14.0.1.21 Perform the following Windows word-processing functions using the Write option: create and navigate within a document, save and retrieve a document, edit document, print a document, format a document.

10.14.0.1.22 Perform the following Windows graphics functions using the Paintbrush option: use a variety of graphic tools to create a drawing, save and

retrieve a drawing, print a drawing, develop a drawing in an effective and systematic manner.

10.14.0.1.23 Perform the following Windows transfer of data between applications functions: transfer images from Paintbrush to Write using Clipboard; move and size a graphic image inside a Write document, save and open Clipboard files, capture windows and screens using Clipboard, and edit the captured images using Paintbrush.

10.14.0.1.24 Explain the function and components of a microcomputer system.

10.14.0.1.25 Explain the purpose of Microsoft Windows 3.10.14.0.1., and the benefits to the user.

10.14.0.1.26 Explain what is needed to work with Windows 3.10.14.0.1.

10.14.0.1.27 Start and exit Windows.

10.14.0.1.28 Use the mouse to select Windows menus, commands, and icons.

10.14.0.1.29 Start and exit a Windows application.

10.14.0.1.30 Control the size and placement of a window.

10.14.0.1.31 Obtain help on any subject in Windows.

10.14.0.1.32 Switch among different application windows.

10.14.0.1.33 Organize application windows and application icons.

10.14.0.1.34 Exit Windows applications safely.

10.14.0.1.35 Use and recognize group windows and program icons.

M-11

10.14.0.1.36 Customize Program Manager by adding program icons and group windows.

10.14.0.1.37 Copy and move Windows program icons.

10.14.0.1.38 Organize Windows program icons and group windows.

10.14.0.1.39 Delete Windows program icons and group windows.

10.14.0.1.40 Use Windows to view the files and directories on a disk.

10.14.0.1.41 Change the way Windows file information is displayed.

M-10

10.14.0.1.42 Using Windows prepare and maintain disks for storing files.

10.14.0.1.43 Using Windows name, locate, select, rename, move, copy, and delete directories and files.

10.14.0.1.44 Start an application from File Manager.

10.14.0.1.45 Using File Manager view and print text files.

10.14.0.1.46 Using Windows create and navigate within a document.

10.14.0.1.47 Using Windows save and retrieve a document.

10.14.0.1.48 Using Windows edit, format, and print a document.

10.14.0.1.49 Create a drawing using a variety of Paintbrush graphic tools.

10.14.0.1.50 Using Paintbrush save, retrieve, and print a drawing.

10.14.0.1.51 Using Paintbrush develop a drawing in an effective and systematic manner.

10.14.0.1.52 Transfer images from Paintbrush to Write using Clipboard.

10.14.0.1.53 Move and size a graphic image inside a Write document.

10.14.0.1.54 Save and open Clipboard files.

10.14.0.1.55 Capture windows and screens using Clipboard.

I-10, M-11

10.14.0.1.56 Edit the captured images using Paintbrush.

10.14.0.1.57 Enter alphabetic and numeric data at 8,000 or more keystrokes per hour with at least 99% accuracy.

HEART of OHIO TECH PREP CONSORTIUM

Revised, 1996

Computerized Business Technologies Model

PART IV:
Postsecondary Competencies

Columbus State Community College

1. Microcomputing Technology

2. Office Administration Technology

MICROCOMPUTING TECHNOLOGY

GENERAL REQUIREMENTS							BASIC REQUIREMENTS						BASIC ELECTIVES							
Upon completion of the Associate of Applied Science Degree in Microcomputing Technology, the graduate will be able to:	ENGL 101 & ENGL 102 OR ENGL 111		ENGL 200	COMM 105 OR COMM 110	SSCI 10x	HUM 1xx	OADM 132	MCT xxx	MATH 102	ACCT 101	ACCT 102	BMGT 101	MATH 103	BMGT 216	BMGT 218	BMGT 231	BMGT 225	LEGL 261	LEGL 262	LEGL 2[illegible]
Understand and use the basic terms and concepts of information systems for business applications.																				
Keyboard 45 words per minute							F			F	F	F		F	F	F	F	F	F	F
Prepare letters, reports, and business documents using various word processing software.	F	F	F	F	F	F														
Create and modify spreadsheet, graphics, databases, and export/import files using appropriate database software.									F	F	F		F							
Create and modify presentation graphics, including group presentations.				F																
Create and modify database files, select and sort data, and produce reports using appropriate database software.																				
Query Bulletin Boards, using on-line communication facilities, to select appropriate information relative to a specific topic.																				
Use Operating System commands to perform basic system operations, such as: formatting disks; copying, moving, deleting, and renaming files; creating/changing file directories; backing up and restoring system files; creating/modifying Configuration Files.	F	F																		
Demonstrate and understand the importance of human relations and positive attitudes in working with and for others, and work effectively as a part of a group on a typical business system project.				F	F															
Understand the basic principles of Local Area Networks, including various topologies, types of communication, security operations, and available diagnostics.																				
Select (with justification), install, configure, operate, and provide operational maintenance of a personal computer system (including hardware and software) for business applications.																				
Be able to specify the requirements for a personal computer system, including hardware, software, data management, data processing policies and procedures, training, operation and maintenance.																				

GENERAL REQUIREMENTS							BASIC REQUIREMENTS						BASIC ELECTIVES							
Upon completion of the Microcomputing Technology, the graduate will be able to:	ENGL 101 & ENGL 102 OR ENGL 111		ENGL 200	COMM 105 OR COMM 110	SSCI 10x	HUM 1xx	OADM 132	MCT xxx	MATH 102	ACCT 101	ACCT 102	BMGT 101	MATH 103	BMGT 216	BMGT 218	BMGT 231	BMGT 225	LEGL 261	LEGL 262	LEGL 264
Think Critically									F											
Solve Problems									F	F	F									
Communicate Effectively	F	F	F	F	F															
Demonstrate Interpersonal Skills					F															
Recognize the Value of Human Diversity					F	F														
Demonstrate Life Management Skills					F															

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MICROCOMPUTING TECHNOLOGY

	TECHNICAL REQUIREMENTS																TECHNICAL ELECTIVES										
Upon completion of the Associate of Applied Science Degree in Microcomputing Technology, the graduate will be able to:	CPT 100 & CPT 101	MCT 108	MCT 121	MCT 131	MCT 141	MCT 205	OADM 192	MCT 211	MCT 215	MCT 221	MCT 231	MCT 241	MCT 251	MCT 261	MCT 281	MCT XXX	MCT 091	MCT 094	MCT 095	MCT 096	MCT 097	MCT 098	MCT 099	EET 144	MCT 255	MCT 265	CPT 241
Understand and use the basic terms and concepts of information systems for business applications.	F	F	F	F	F			F	F	F	F	F	F		FS												F
Keyboard 45 words per minute.																											
Prepare letters, reports, and business documents using various word processing software.	F	F					F					F			FS												
Create and modify spreadsheets, graphics, databases, and export/import files using appropriate database software.	F	F		FS	FS			F							FS												
Create and modify presentation graphics, including group presentations.								FS							FS												
Create and modify database files, select and sort data, and produce reports using appropriate database software.	F	F		F											FS												F
Query Bulletin Boards, using on-line communication facilities, to select appropriate information relative to a specific topic.																											
Use Operating System commands to perform basic system operations, such as: formatting disks; copying, moving, deleting, and renaming files; creating/changing file directories; backing up and restoring system files; creating/modifying Configuration Files.	F	F	FS					F		F	F				S												
Demonstrate and understand the importance of human relations and positive attitudes in working with and for others, and work effectively as a part of a group on a typical business system project.										F		F			S												
Understand the basic principles of Local Area Networks, including various topologies, types of communication, security operations, and available diagnostics.			F						F	FS																	
Select (with justification), install, configure, operate, and provide operational maintenance of a personal computer system (including hardware and software) for business applications.									FS				F		S												
Be able to specify the requirements for a personal computer system, including hardware, software, data management, data processing policies and procedures, training, operation and maintenance.	F								FS				F		S												

	TECHNICAL REQUIREMENTS																TECHNICAL ELECTIVES										
Upon completion of the Microcomputing Technology, the graduate will be able to:	CPT 100 & CPT 101	MCT 108	MCT 121	MCT 131	MCT 141	MCT 205	OADM 192	MCT 211	MCT 215	MCT 221	MCT 231	MCT 241	MCT 251	MCT 261	MCT 281	MCT XXX	MCT 091	MCT 094	MCT 095	MCT 096	MCT 097	MCT 098	MCT 099	EET 144	MCT 255	MCT 265	CPT 241
Think Critically	F	F	F	F	F		F	F	F	F	F	F	F	F	S	F	F	F	F	F	F	F	F	F	F	F	F
Solve Problems	F	F	F	F	F		F	F	F	F		F	F	F	S												F
Communicate Effectively												F	F		S												
Demonstrate Interpersonal Skills															S												
Recognize the Value of Human Diversity															S												
Demonstrate Life Management Skills															S												

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Office Administration Technology
Assessment Matrix
Executive Office Administration

Major Outcomes	OADM 101	OADM 102	OADM 111	OADM 121	OADM 132	OADM 133	OADM 134	OADM 144	OADM 151
Keyboard accurately at a minimum of 60 words per minute					F	F	F		
Transcribe accurately from electronic media and at an acceptable production rate									F
Maintain a filing system (alphabetic, numeric, geographic, and/or by subject)				F/S					
Write or draft responses to routine correspondence, use correct grammar, and use punctuation rules accurately	F	F/S					F	F	F
Perform basic accounting tasks			F/S						
Understand and use Excel for Windows, create and revise spreadsheets									
Use Windows commands to operate microcomputers effectively		F	F	F	F	F	F	F	F
Prepare graphics and present information									
Research information using a variety of resources including the Internet and annotate articles									
Use computers to integrate graphics into documents									
General Education Outcomes									
hink Critically			F	F		S	F		
Solve Problems			F	F					
Communicate Effectively	F	S						S	S
Demonstrate Interpersonal Skills									
Recognize the Value of Human Diversity									
Demonstrate Life Management Skills									

Office Administration Technology
Assessment Matrix
Executive Office Administration

Major Outcomes	OADM 164	OADM 165	OADM 167	OADM 172	OADM 191	OADM 192	OADM 211	OADM 224	OADM 225
Keyboard accurately at a minimum of 60 words per minute								S	S
Transcribe accurately from electronic media and at an acceptable production rate								S	S
Maintain a filing system (alphabetic, numeric, geographic, and/or by subject)								S	S
Write or draft responses to routine correspondence, use correct grammar, and use punctuation rules accurately							F	S	S
Perform basic accounting tasks								S	S
Understand and use Excel for Windows, create and revise spreadsheets				F/S				S	S
Use Windows commands to operate microcomputers effectively	F	F/S	F/S	F/S	F	F/S	F	S	S
Prepare graphics and present information		F/S	F	F/S		F/S		S	S
Research information using a variety of resources including the Internet and annotate articles							F/S	S	S
Use computers to integrate graphics into documents		F/S	F/S	F/S		F/S	F/S	S	S
General Education Outcomes									
Think Critically		F	F	F		F	S	S	S
Solve Problems		F	F	F		F	S	S	S
Communicate Effectively	F	S	F		S	F	S	S	S
Demonstrate Interpersonal Skills							F/S	S	S
Recognize the Value of Human Diversity							F/S	S	S
Demonstrate Life Management Skills							F/S	S	S

Office Administration Technology
Assessment Matrix
Executive Office Administration

Major Outcomes	OADM 252	OADM 261	OADM XXX	CPT 101	BMGT XXX	LEGL 261	ENGL 101	ENGL 102	ENGL 200	COMM 105
Keyboard accurately at a minimum of 60 words per minute		S								
Transcribe accurately from electronic media and at an acceptable production rate	F	S								
Maintain a filing system (alphabetic, numeric, geographic, and/or by subject)		S								
Write or draft responses to routine correspondence, use correct grammar, and use punctuation rules accurately	S	S					F/S	F/S	F/S	
Perform basic accounting tasks		S								
Understand and use Excel for Windows, create and revise spreadsheets		S								
Use Windows commands to operate microcomputers effectively	S	S	S	F						
Prepare graphics and present information										F/S
Research information using a variety of resources including the Internet and annotate articles	F	F/S							S	
Use computers to integrate graphics into documents		F/S		F						
General Education Outcomes										
Think Critically	F	S				F	F	F	F	
Solve Problems	F	S	F	F	F	F		F		F
Communicate Effectively	S	S					F	F/S	F/S	F
Demonstrate Interpersonal Skills		S								
Recognize the Value of Human Diversity		S				F				
Demonstrate Life Management Skills		S								

Office Administration Technology
Assessment Matrix
Executive Office Administration

Major Outcomes	MATH 101	HUM 1XX	NSCI 101
.eyboard accurately at a minimum of 60 words per minute			
Transcribe accurately from electronic media and at an acceptable production rate			
Maintain a filing system (alphabetic, numeric, geographic, and/or by subject)			
Write or draft responses to routine correspondence, use correct grammar, and use punctuation rules accurately			
Perform basic accounting tasks	F		
Understand and use Excel for Windows, create and revise spreadsheets			
Use Windows commands to operate microcomputers effectively			
Prepare graphics and present information			
Research information using a variety of resources including the Internet and annotate articles			
Use computers to integrate graphics into documents			
General Education Outcomes			
.iink Critically	F	F	F
Solve Problems	F		F
Communicate Effectively		F/S	
Demonstrate Interpersonal Skills			
Recognize the Value of Human Diversity		F/S	
Demonstrate Life Management Skills			

Office Administration Technology
Assessment Matrix
Executive Office Administration

Major Outcomes	Methods of Formative Assessment	Methods of Summative Assessment
Keyboard accurately at a minimum of 60 words per minute	Timed writings for one, three, and five minutes	Timed writings for one, three, and five minutes
Transcribe accurately from electronic media and at an acceptable production rate	Production time-writings Assignments	Production timed-writings Field experience employer evaluation Capstone course
Maintain a filing system (alphabetic, numeric, geographic, and/or by subject)	Filing and finding tests	Filing and finding tests OPAC examination
Write or draft responses to routine correspondence, use correct grammar, and use punctuation rules accurately	Written documents scored with rubrics Written examinations	Written documents scored with rubrics Written examinations Field experience employer evaluation
Perform basic accounting tasks	Theory and practicum examinations	Capstone course Field experience employer evaluation
Understand and use Excel for Windows, create and revise spreadsheets	Theory and practicum examinations	Capstone course Field experience employer evaluation
Use Windows commands to operate microcomputers effectively	Theory and practicum examinations	Capstone course Field experience employer evaluation
Prepare graphics and present information	Oral presentation evaluated by audience using a prescribed rubric	Oral presentation evaluated by audience using a prescribed rubric Capstone course Field experience employer evaluation
Research information using a variety of resources including the Internet and annotate articles	Written assignment scored using a rubric	Written assignment scored using a rubric Capstone course Field experience employer evaluation Research paper
Use computers to integrate graphics into documents	Written assignment scored using a rubric	Written assignment scored using a rubric Capstone course Field experience employer evaluation

Office Administration Technology
Assessment Matrix
Legal Office Administration

Major Outcomes	OADM 101	OADM 102	OADM 111	OADM 121	OADM 132	OADM 133	OADM 134	OADM 144	OADM 151	OADM 164
Keyboard accurately at a minimum of 60 words per minute					F	F	F			
Transcribe accurately from electronic media and at an acceptable production rate									F	
Maintain a filing system (alphabetic, numeric, geographic, and/or by subject)				F/S						
Write or draft responses to routine correspondence, use correct grammar, and use punctuation rules accurately	F	F/S					F	F	F	
Use Windows commands to operate microcomputers effectively		F	F	F	F	F	F	F	F	F
Perform basic accounting tasks			F/S							
Transcribe letters and documents of a legal nature in correct form at an acceptable production rate										
Demonstrate a basic knowledge of court structure and court proceedings at the federal, state, and local levels										
Demonstrate a knowledge of the basics of the law and of legal relations, corporate, real estate, and bankruptcy law										
Understand the documents, procedures, and sequence of events involved in appellate proceedings										
General Education Outcomes										
Think Critically			F	F		S	F			
Solve Problems			F	F						
Communicate Effectively	F	S						S	S	F
Demonstrate Interpersonal Skills										
Recognize the Value of Human Diversity										
Demonstrate Life Management Skills										

Office Administration Technology
Assessment Matrix
Legal Office Administration

Major Outcomes	OADM 165	OADM 167	OADM 172	OADM 191	OADM 192	OADM 211	OADM 224	OADM 225	OADM 253	OADM 254
.eyboard accurately at a minimum of 60 words per minute							S	S		
Transcribe accurately from electronic media and at an acceptable production rate							S	S	F	S
Maintain a filing system (alphabetic, numeric, geographic, and/or by subject)							S	S		
Write or draft responses to routine correspondence, use correct grammar, and use punctuation rules accurately						F	S	S	S	F
Use Windows commands to operate microcomputers effectively	F/S	F/S	F/S	F	F/S	F	S	S	S	S
Perform basic accounting tasks							S	S		
Transcribe letters and documents of a legal nature in correct form at an acceptable production rate							S	S	F	F/S
Demonstrate a basic knowledge of court structure and court proceedings at the federal, state, and local levels							S	S	F	S
Demonstrate a knowledge of the basics of the law and of legal relations, corporate, real estate, and bankruptcy law							S	S	F	S
Understand the documents, procedures, :d sequence of events involved in appellate proceedings							S	S	F	S
General Education Outcomes										
Think Critically	F	F	F		F	S	S	S		
Solve Problems	F	F	F		F	S	S	S		
Communicate Effectively	S	F		S	F	S	S	S		
Demonstrate Interpersonal Skills						F/S	S	S		
Recognize the Value of Human Diversity						F/S	S	S		
Demonstrate Life Management Skills						F/S	S	S		

Office Administration Technology
Assessment Matrix
Legal Office Administration

Major Outcomes	OADM 261	CPT 101	BMGT XXX	LEGL 261	ENGL 101	ENGL 102	ENGL 200	COMM 105	MATH 101	HUM 1XX	NSCI 101
Keyboard accurately at a minimum of 60 words per minute	S										
Transcribe accurately from electronic media and at an acceptable production rate	S										
Maintain a filing system (alphabetic, numeric, geographic, and/or by subject)	S										
Write or draft responses to routine correspondence, use correct grammar, and use punctuation rules accurately	S				F/S	F/S	F/S				
Use Windows commands to operate microcomputers effectively	S	F									
Perform basic accounting tasks	S										
Transcribe letters and documents of a legal nature in correct form at an acceptable production rate				F							
Demonstrate a basic knowledge of court structure and court proceedings at the federal, state, and local levels				S							
Demonstrate a knowledge of the basics of the law and of legal relations, corporate, real estate, and bankruptcy law				S							
Understand the documents, procedures, and sequence of events involved in appellate proceedings				S							
General Education Outcomes											
Think Critically	S			F	F	F	F	F	F	F	F
Solve Problems	S	F	F	F		F		F	F		F
Communicate Effectively	S				F	F/S	F/S			F/S	
Demonstrate Interpersonal Skills	S										
Recognize the Value of Human Diversity	S									F/S	
Demonstrate Life Management Skills	S										

Office Administration Technology
Assessment Matrix
Legal Office Administration

Major Outcomes	Methods of Formative Assessment	Methods of Summative Assessment
Keyboard accurately at a minimum of 60 words per minute	Timed writings for one, three, and five minutes	Timed writings for one, three, and five minutes
Transcribe accurately from electronic media and at an acceptable production rate	Production time-writings Assignments	Production timed-writings Field experience employer evaluation Capstone course
Maintain a filing system (alphabetic, numeric, geographic, and/or by subject)	Filing and finding tests	Filing and finding tests OPAC examination
Write or draft responses to routine correspondence, use correct grammar, and use punctuation rules accurately	Written documents scored with rubrics Written examinations	Written documents scored with rubrics Written examinations Field experience employer evaluation
Perform basic accounting tasks	Theory and practicum examinations	Capstone course Field experience employer evaluation
Use Windows commands to operate microcomputers effectively	Theory and practicum examinations	Capstone course Field experience employer evaluation
Transcribe letters and documents of a legal nature in correct form at an acceptable production rate	Production time-writings Assignments	Production timed-writings Field experience employer evaluation Capstone course
Demonstrate a basic knowledge of court structure and court proceedings at the federal, state, and local levels	Class assignments Examinations	Capstone course Field experience employer evaluation
Demonstrate a knowledge of the basics of the law and of legal relations, corporate, real estate, and bankruptcy law	Class assignments Examinations	Capstone course Field experience employer evaluation
Understand the documents, procedures, and sequence of events involved in appellate proceedings	Class assignments Examinations	Capstone course Field experience employer evaluation

Office Administration Technology
Assessment Matrix
Medical Office Administration

Major Outcomes	OADM 101	OADM 102	OADM 111	OADM 121	OADM 132	OADM 133	OADM 134	OADM 144	OADM 151	OADM 164
..eyboard accurately at a minimum of 60 words per minute					F	F	F			
Transcribe accurately from electronic media and at an acceptable production rate									F	
Maintain a filing system (alphabetic, numeric, geographic, and/or by subject)				F/S						
Write or draft responses to routine correspondence, use correct grammar, and use punctuation rules accurately	F	F/S					F	F	F	
Perform basic accounting tasks		F/S								
Use Windows commands to operate microcomputers effectively		F	F	F	F	F	F	F	F	F
Spell and pronounce medical terms accurately										
Transcribe a variety of medical reports accurately and at an acceptable production rate										
Use fee schedules and collection procedures as well as banking, accounting, and payroll procedures applicable in a medical office setting			F							
General Education Outcomes										
Think Critically			F	F		S	F			
..lve Problems			F	F						
mmunicate Effectively	F	S						S	S	F
Demonstrate Interpersonal Skills										
Recognize the Value of Human Diversity										
Demonstrate Life Management Skills										

Office Administration Technology
Assessment Matrix
Medical Office Administration

Major Outcomes	OADM 165	OADM 172	OADM 191	OADM 192	OADM 211	OADM 212	OADM 224	OADM 225	OADM 252	OADM 261
Keyboard accurately at a minimum of 60 words per minute							S	S		S
Transcribe accurately from electronic media and at an acceptable production rate							S	S	F	S
Maintain a filing system (alphabetic, numeric, geographic, and/or by subject)						F	S	S		S
Write or draft responses to routine correspondence, use correct grammar, and use punctuation rules accurately					F	S	S	S	S	S
Perform basic accounting tasks						F	S	S		S
Use Windows commands to operate microcomputers effectively	F/S	F/S	F	F/S	F	F	S	S	S	S
Spell and pronounce medical terms accurately						S	S	S	F	S
Transcribe a variety of medical reports accurately and at an acceptable production rate						F/S	S	S	F	S
Use fee schedules and collection procedures as well as banking, accounting, and payroll procedures applicable in a medical office setting						F/S	S	S		S
General Education Outcomes										
Think Critically		F		F	F	S	S	S	F	S
Solve Problems		F		F	F	S	S	S	F	S
Communicate Effectively		S	S	F	F	F/S	S	S	S	S
Demonstrate Interpersonal Skills						S	S	S		S
Recognize the Value of Human Diversity						S	S	S		S
Demonstrate Life Management Skills						S	S	S		S

Office Administration Technology
Assessment Matrix
Medical Office Administration

Major Outcomes	OADM XXX	CPT 101	ENGL 101	ENGL 102	ENGL 200	COMM 105	MULT 101	LEGL 261	BIO 111	MLT 100	MATH 101	HUM 1XX
..eyboard accurately at a minimum of 60 words per minute												
Transcribe accurately from electronic media and at an acceptable production rate												
Maintain a filing system (alphabetic, numeric, geographic, and/or by subject)												
Write or draft responses to routine correspondence, use correct grammar, and use punctuation rules accurately			F/S	F/S	F/S							
Perform basic accounting tasks											F	
Use Windows commands to operate microcomputers effectively	F	F										
Spell and pronounce medical terms accurately							F	F	F/S	F		
Transcribe a variety of medical reports accurately and at an acceptable production rate												
Use fee schedules and collection procedures as well as banking, accounting, and payroll procedures applicable in a medical office setting												
General Education Outcomes												
Think Critically			F	F	F				F		F	
C..lve Problems	F	F		F		F	F	F	F	F	F	
..mmunicate Effectively			F	F/S	F/S	F						
Demonstrate Interpersonal Skills												
Recognize the Value of Human Diversity												
Demonstrate Life Management Skills												

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Office Administration Technology
Assessment Matrix
Medical Office Administration

Major Outcomes	Methods of Formative Assessment	Methods of Summative Assessment
Keyboard accurately at a minimum of 60 words per minute	Timed writings for one, three, and five minutes	Timed writings for one, three, and five minutes
Transcribe accurately from electronic media and at an acceptable production rate	Production time-writings Assignments	Production timed-writings Field experience employer evaluation Capstone course
Maintain a filing system (alphabetic, numeric, geographic, and/or by subject)	Filing and finding tests	Filing and finding tests OPAC examination
Write or draft responses to routine correspondence, use correct grammar, and use punctuation rules accurately	Written documents scored with rubrics Written examinations	Written documents scored with rubrics Written examinations Field experience employer evaluation
Perform basic accounting tasks	Theory and practicum examinations	Capstone course Field experience employer evaluation
Use Windows commands to operate microcomputers effectively	Theory and practicum examinations	Capstone course Field experience employer evaluation
Spell and pronounce medical terms accurately	Written examinations Oral examinations	Written examinations Oral examinations
Transcribe a variety of medical reports accurately and at an acceptable production rate	Timed writings for one, three, and five minutes	Timed writings for one, three, and five minutes
Use fee schedules and collection procedures as well as banking, accounting, and payroll procedures applicable in a medical office setting	Written practicums Simulations	Capstone course Field experience employer evaluation

HEART of OHIO TECH PREP CONSORTIUM

Revised, 1996

Computerized Business Technologies Model

PART V:
Advisory/Review Committee Members

COLUMBUS STATE COMMUNITY COLLEGE
OHIO TECH PREP CONSORTIUM

Computerized Business Technology
Curriculum Review Meeting

June 5, 1995

5:30 P.M. ------ NESTOR HALL SEMINAR ROOM B

EASTLAND

Advisory Committee
Sue Hiser, Taylor Management
Cammi VanHorn, Limited Credit Services

SOUTHWESTERN CITY SCHOOLS

Advisory Committee
Monty Chase, Huntington National Bank
Linda Gilda, Galbraith Company

COLUMBUS STATE COMMUNITY COLLEGE

Advisory Committee
Christine Barton, Maniace Law Offices
Enid Berry, American Electric Power
Terry Cochran, Nationwide Insurance
Sherm Everett, Bradley Dodge Corporation
Larry Peterson, McDonald Cassell & Bassett

HEART of OHIO TECH PREP CONSORTIUM

Revised, 1996

Computerized Business Technologies Model

PART VI:
Program Application

DRAFT --- STILL NEEDS LABOR MARKET DATA & EXIT OCCUPATIONS

TECH PREP PROGRAM APPLICATION

Tech Prep Consortium Heart of Ohio Tech Prep Consortium Date Rev. 1996

Proposed Tech Prep Program Computerized Business Technologies

1. Provide labor market information substantiating employment opportunities in your area.

   Program approved per FY 1995 proposal for operating funds. This is a revision of the original model; no additional labor market data were collected.

2. List the potential associate degree/apprenticeship exit occupations for this Tech Prep program.

Business Applications Programmer	Computer User Liaison
PC Software Applications Trainer	PC Hardware/Software Salesperson
Staff Assistant	PC Hardware/Software Consultant
Administrative Assistant	Office Manager
Assistant to Department Manager	Administrative Secretary
Executive Secretary	Executive Assistant
Customer Service Representative	Collection Representative
New Accounts Representative	Research Clerk
Remittance Processor	Human Resources Assistant
Legal Office Manager	Legal Secretary
Medical Office Manager	Medical Secretary

3. List the potential high school exit occupations for this Tech Prep program.

Computer Operator
Customer Service Representative
New Accounts Representative
Remittance Clerk
Department Secretary (entry-level)
Collection Representative
Research Clerk

4. Describe your consortium's plan for delivery of this Tech Prep program.

The following schools began this model in grade 11 in school year 1994-95: Eastland Career Center, Franklin Heights High School. The following school plans to implement the model in grade 11 in school year 1995-96: Westland High School. The following schools plan to implement the program at grade 11 in school year 1996-97: Grove City High School, Chillicothe High School (satellite program for Pickaway-Ross VEPD).

Columbus State Community College offers two Tech Prep college pathways (Microcomputing Technology, Office Administration Technology) to complete this model. The college will enable the Tech Prep high school to receive college credit for competency areas they have mastered; students will be strongly encouraged to complete the entire Tech Prep college pathway of their choice, which includes advanced skills coursework.

The Consortium has already reviewed and revised this model once since its inception in school year 1994-95. The attached document reflects that update.

The Consortium has distributed copies of the revised program model to all partner schools and colleges. Schools that currently do not offer the model have been encouraged to consider doing so. The model will continue to be reviewed annually at the local level, and every three years by the Consortium's Program Advisory Committee for this model.

The Consortium is also studying the feasibility of developing a Business Technologies Core Model. Should this work commence, it is likely that the current Computerized Business Technologies model will be infused into the Business Core Model as one of its options.